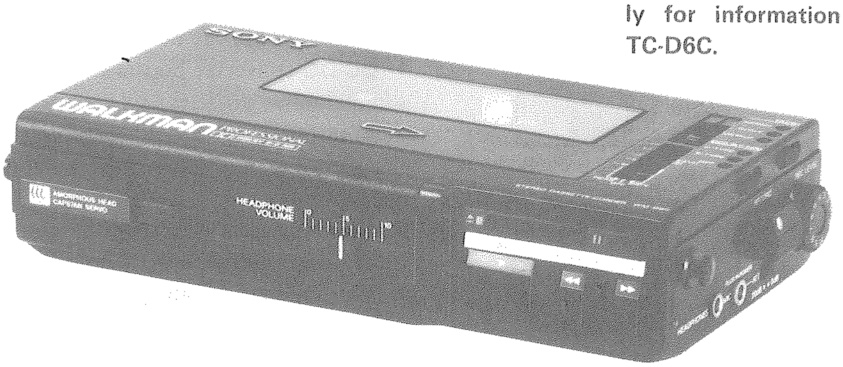
WM-D6C/TC-D6C

SERVICE MANUAL

- Refer to MDR-40L Service Manual issued previously for information of headphones supplied with WM-D6C.
- Refer to ECM-939LT Service Manual issued previously for information of headphones supplied with TC-D6C.



WM-D6C:
US Model
Canadian Model
AEP Model
UK Model
E Model
TC-D6C:
US Model

'**Dolby**' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Recording System: 4-track, 2-channel stereo

Wow and Flutter: ±0.14% (DIN)
0.04% WRMS (NAB)

Tape Speed Deviation: ±0.3% (speed tuning OFF)

Speed Tuner Variations: Approx. ±4%

Frequency Response: DOLBY NR OFF
- With TYPE IV cassette (Sony METALLIC)
40 – 15,000 Hz ±3 dB
- With TYPE II cassette (Sony UCX)
40 – 15,000 Hz ±3 dB
- With TYPE I cassette (Sony BHF or HFX)
40 – 15,000 Hz ±3 dB

S/N (NAB, at peak level): DOLBY NR C
TYPE IV cassette (Sony METALLIC) 71 dB
TYPE II cassette (Sony UCX) 71 dB
TYPE I cassette (Sony BHF or HFX) 67 dB
DOLBY NR B
TYPE IV cassette (Sony METALLIC) 65 dB
TYPE II cassette (Sony UCX) 65 dB
TYPE I cassette (Sony BHF or HFX) 61 dB
DOLBY NR OFF
TYPE IV cassette (Sony METALLIC) 58 dB
TYPE II cassette (Sony UCX) 58 dB
TYPE I cassette (Sony BHF or HFX) 54 dB

Total Harmonic Distorsion: 0.9% with Sony METALLIC

Inputs: MIC (PLUG IN POWER)
(stereo minijack) x 1
0.25 mV (–70 dB) with low impedance microphone
LINE IN (stereo minijack) x 1
77.5 mV (–20 dB) (47 kilohms)

Tape Transport Mechanism Type	MT-D6C-20

Outputs: LINE OUT (stereo minijack) x 1
output level 0.25 V (–10 dB) (less than 4.7 kilohms)
Headphones (stereo minijack) x 1
load impedance 8 – 300 ohms

Power Output: Headphones
30 mW + 30 mW (at 10% harmonic distortion)
load impedance 32 ohms

Battery Life: See page 2.

Power Requirements: 6 V dc, four batteries, IEC designation R6 (size AA)
BP-23 battery pack (optional)
External power input jack
(required power 6 V dc) accepts Sony ac power adaptor (optional) listed on page 2 for use on appropriate ac power, or Sony DCC-127A car battery cord (optional) for use on 12 V car battery

Dimensions: 181 x 40 x 95 mm (w/h/d)
(7 1/4 x 1 5/8 x 3 3/4 inches)
including projecting parts

Weight: Approx. 640 g (1 lb 7 oz) including batteries

0 dB = 0.775 V

MICROFILM

H1085

STEREO CASSETTE-CORDER

SONY®

TC

Battery life

type of cassette / batteries	continuous recording		continuous playback
	TYPE IV (Sony METALLIC)	TYPE I (Sony BHF, HFX)	TYPE I, IV (Sony BHF, HFX, METALLIC)
Sony Eveready AM3 alkaline batteries	4	5	6
Sony SUM-3(NS) New Super batteries	2	2.5	3

(hours)

OTHER POWER SOURCES

HOUSE CURRENT

Use the appropriate ac power adaptor listed below, available in the countries where the set is used.

First connect the adaptor to DC IN 6 V jack, and then to a wall outlet.

Before connecting, be sure to read the instruction manual for the adaptor.

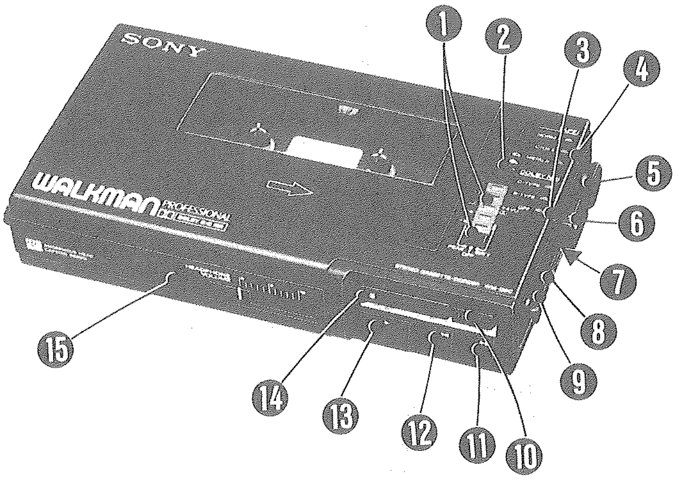
location	ac power adaptor	input voltage of adaptor
AEP	AC-66	220 V ac, 50 Hz
	AC-456C	110 or 220 V ac adjustable, 50 Hz
UK	AC-15A	240 V ac, 50 Hz
Canadian	AC-9	120 V ac, 60 Hz
E	AC-4A	110, 120, 220 or 240 V ac adjustable, 50/60 Hz
US	AC-9W	120 V ac, 60 Hz

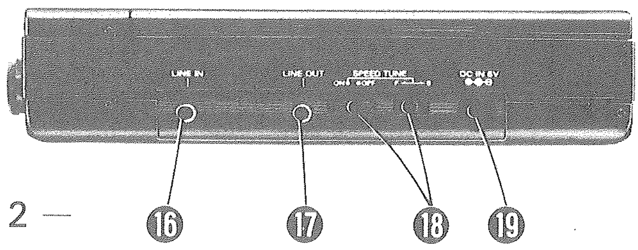
FEATURES

- **Quartz lock capstan servo system** assures accurate and stable tape speed.
- In addition to the conventional B-type Dolby* NR system, the WM-D6C or TC-D6C employs the **C-type Dolby NR system** which reduces tape noise twice as effectively as the B-type system.
- **Speed control** adjusts the tape speed accurately (approx. ±4%) in the playback mode.
- **DC-DC converter** boosts the low voltage of DC 6V and maintains sufficient power.
- **Amorphous head** for recording/playback provides a wider dynamic range and a more extended frequency response.
- **Tape selector** for optimum recording with standard tapes as well as high-performance tapes.
- **Microphone attenuator** eliminates the distortion which may be caused by high-level input signal.
- **MIC (PLUG IN POWER) jack** can supply power to an ECM-102 electret condenser stereo microphone (optional).
- **Four different power sources:** batteries, house current, rechargeable battery pack, and 12 V car battery.
- **5-LED peak/battery indicator** shows both the peak level and the battery strength.
- **Stereo minijacks** can be used for connecting to audio components.

PARTS IDENTIFICATION

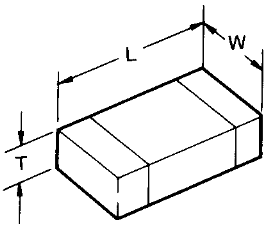
① Peak/battery indicator and indication selector
② Tape counter and reset button
③ DOLBY NR selector
④ TAPE selector
⑤ REC LEVEL (recording level) control
⑥ ● RECORD button
⑦ MIC ATT (microphone attenuator) switch
⑧ MIC (PLUG IN POWER) jack (stereo minijack)
⑨ HEADPHONES jack
⑩ ❚❚ (pause) button
⑪ ▶▶ (fast forward) CUE button
⑫ ◀◀ (rewind) REVIEW button
⑬ ▶ PLAY (playback) button
⑭ ⏏■ (eject/stop) button
⑮ HEADPHONE VOLUME control
⑯ LINE IN jack
⑰ LINE OUT jack
⑱ SPEED TUNE selector and control
⑲ DC IN 6 V jack





Chip components

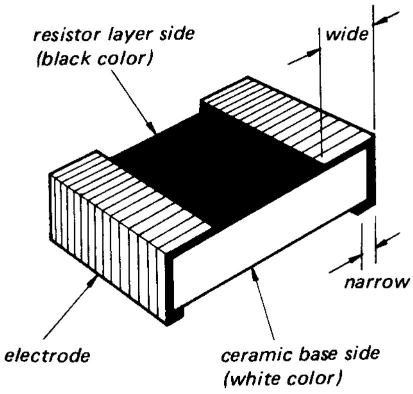
Chip components include resistors, capacitors, transistors, diodes, coil and adjustable resistors.
In this section, the types of resistors, ceramic capacitors, transistors and diodes which are used most frequently will be described.
Dimension of transistors and capacitors



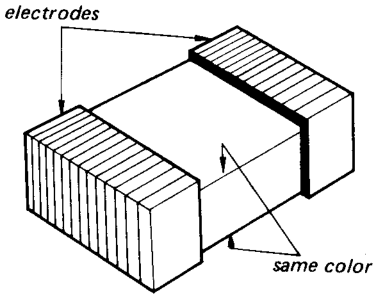
(Unit: mm)

Type	L	W	T
3216	3.2	1.6	0.45 ~ 0.6
2125	2.0	1.25	0.35 ~ 0.5

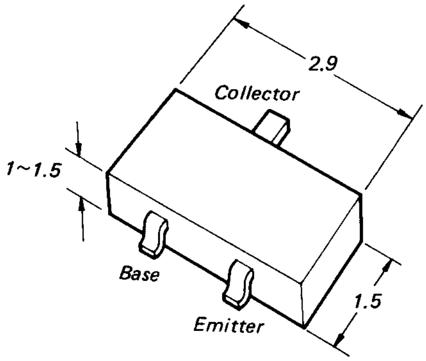
Identification


resistor layer side
(black color)
wide
narrow
electrode
ceramic base side
(white color)

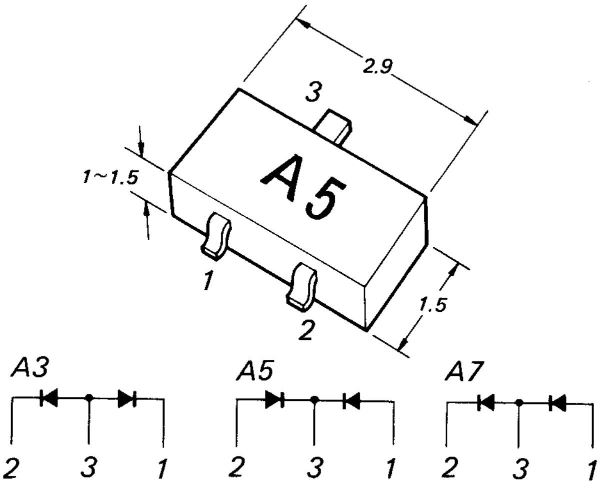
Resistor


electrodes
same color

Laminated Ceramic Capacitor


2.9
Collector
1~1.5
Base
Emitter
1.5

Transistor


2.9
3
A5
1~1.5
1
2
1.5
A3
2
3
1
A5
2
3
1
A7
2
3
1

Diode

Replacing chip components

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

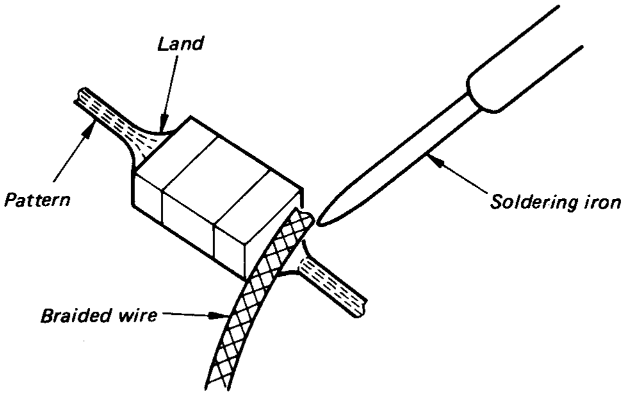
Precautions for replacement

1. **Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.**
2. **Never re-use a disconnected chip component. Dispose of all old chip components.**
3. **To protect the chip component, heating time for attaching the component should be within 3 seconds.**

○ Removing chip components

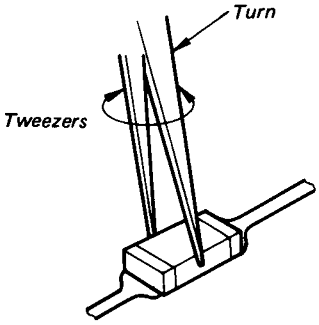
(1) Removing solder at electrode

Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off.
Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

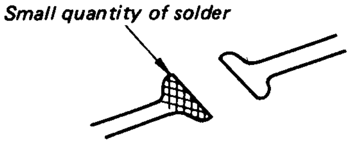
After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

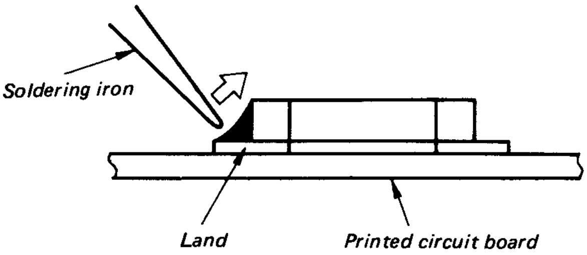
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

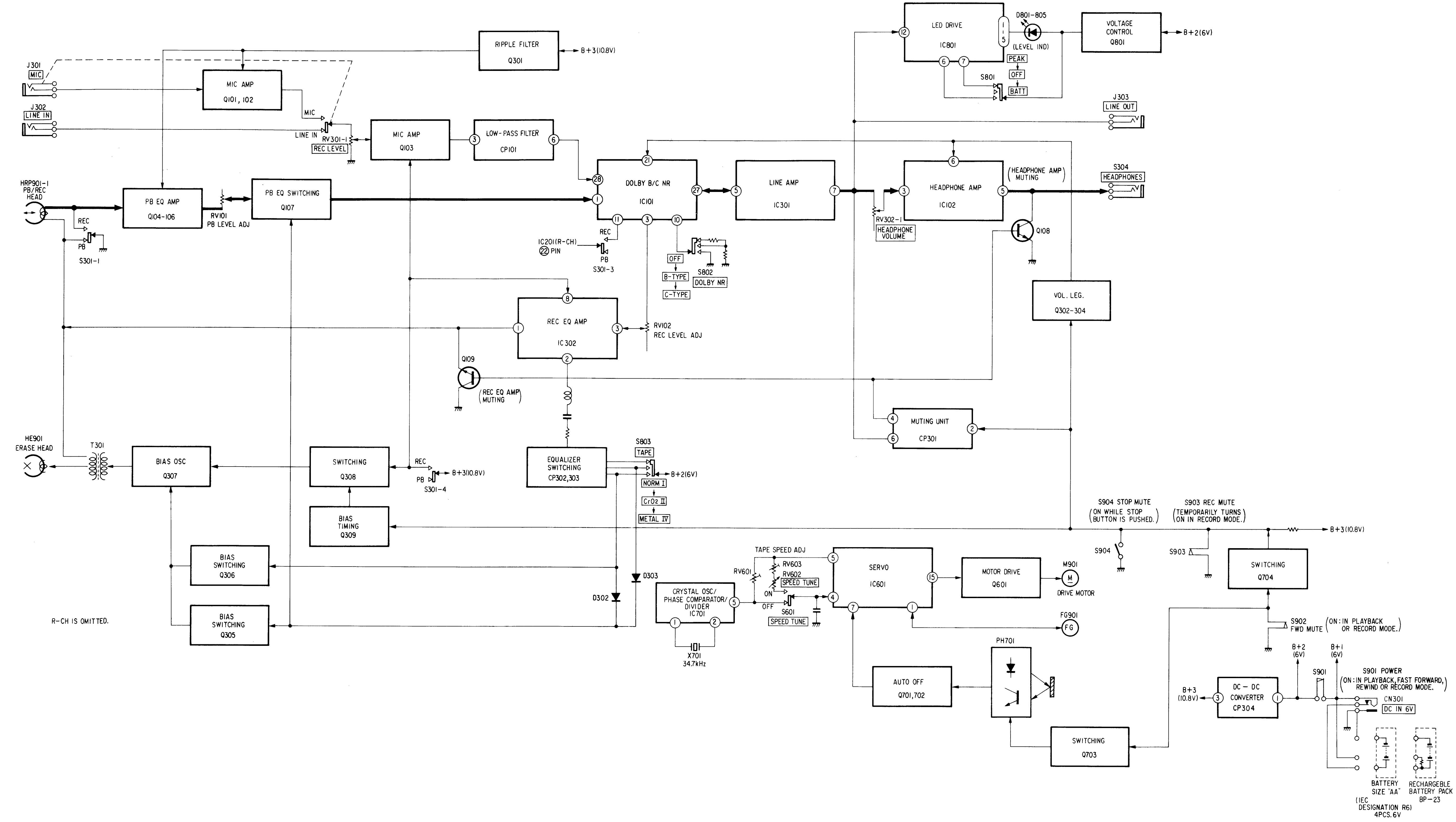
Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

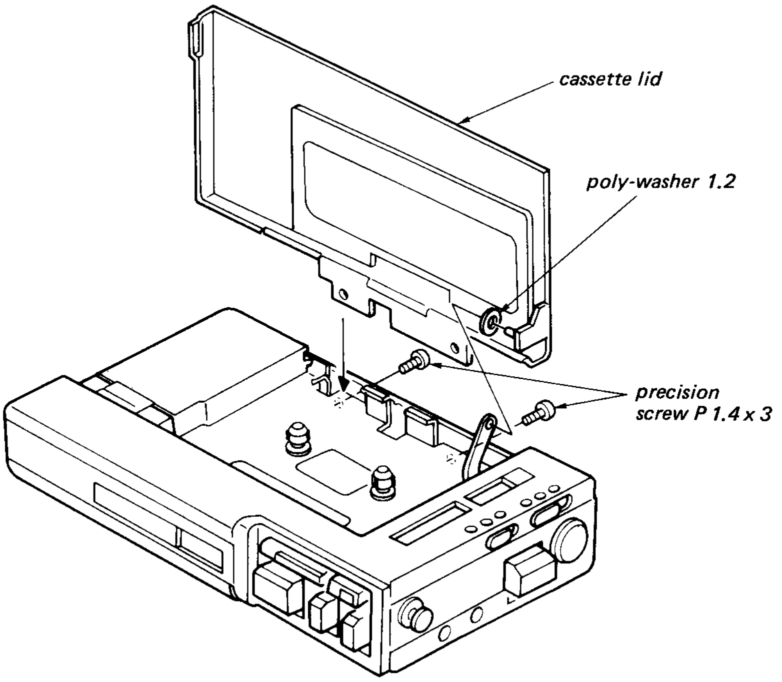
Solder the electrode on the other side in the same way as in (2) above.

SECTION 1
BLOCK DIAGRAM

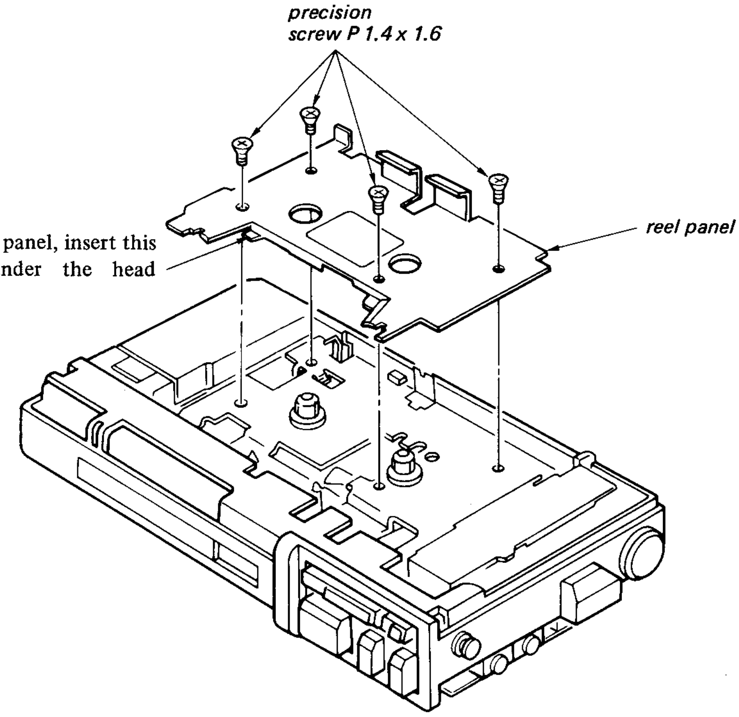

J301
MIC
J302
LINE IN
MIC AMP
Q101, 102
RIPPLE FILTER
Q301
B+3(10.8V)
MIC
LINE IN
RV301-1
REC LEVEL
MIC AMP
Q103
LOW-PASS FILTER
CP101
HRP901-1
PB/REC
HEAD
REC
PB
S301-1
PB EQ AMP
Q104-106
RV101
PB LEVEL ADJ
PB EQ SWITCHING
Q107
DOLBY B/C NR
IC101
IC201(R-CH)
22 PIN
REC
PB
S301-3
OFF
B-TYPE
C-TYPE
S802
DOLBY NR
LINE AMP
IC301
LED DRIVE
IC801
D801-805
(LEVEL IND)
PEAK
OFF
BATT
S801
VOLTAGE
CONTROL
Q801
B+2(6V)
J303
LINE OUT
HEADPHONE AMP
IC102
(HEADPHONE AMP MUTING)
S304
HEADPHONES
RV302-1
HEADPHONE VOLUME
Q108
VOL. LEG.
Q302-304
REC EQ AMP
IC302
RV102
REC LEVEL ADJ
Q109
(REC EQ AMP MUTING)
MUTING UNIT
CP301
HE901
ERASE HEAD
T301
BIAS OSC
Q307
SWITCHING
Q308
REC
PB
S301-4
B+3(10.8V)
EQUALIZER
SWITCHING
CP302,303
S803
TAPE
NORM I
CrO2 II
METAL IV
B+2(6V)
BIAS
TIMING
Q309
BIAS
SWITCHING
Q306
BIAS
SWITCHING
Q305
D302
D303
R-CH IS OMITTED.
CRYSTAL OSC/
PHASE COMPARATOR/
DIVIDER
IC701
X701
34.7kHz
TAPE SPEED ADJ
RV601
RV603
RV602
SPEED TUNE
ON
OFF
S601
SPEED TUNE
SERVO
IC601
MOTOR DRIVE
Q601
M901
DRIVE MOTOR
FG901
FG
PH701
AUTO OFF
Q701,702
SWITCHING
Q703
S904 STOP MUTE
(ON WHILE STOP BUTTON IS PUSHED.)
S903 REC MUTE
(TEMPORARILY TURNS ON IN RECORD MODE.)
B+3(10.8V)
S904
S903
SWITCHING
Q704
S902
FWD MUTE
(ON: IN PLAYBACK OR RECORD MODE.)
B+2
(6V)
B+1
(6V)
S901
S901 POWER
(ON: IN PLAYBACK, FAST FORWARD, REWIND OR RECORD MODE.)
B+3
(10.8V)
DC - DC
CONVERTER
CP304
CN301
DC IN 6V
BATTERY
SIZE "AA"
(IEC DESIGNATION R6)
4PCS. 6V
RECHARGEBLE
BATTERY PACK
BP-23

SECTION 2
DISASSEMBLY

CASSETTE LID

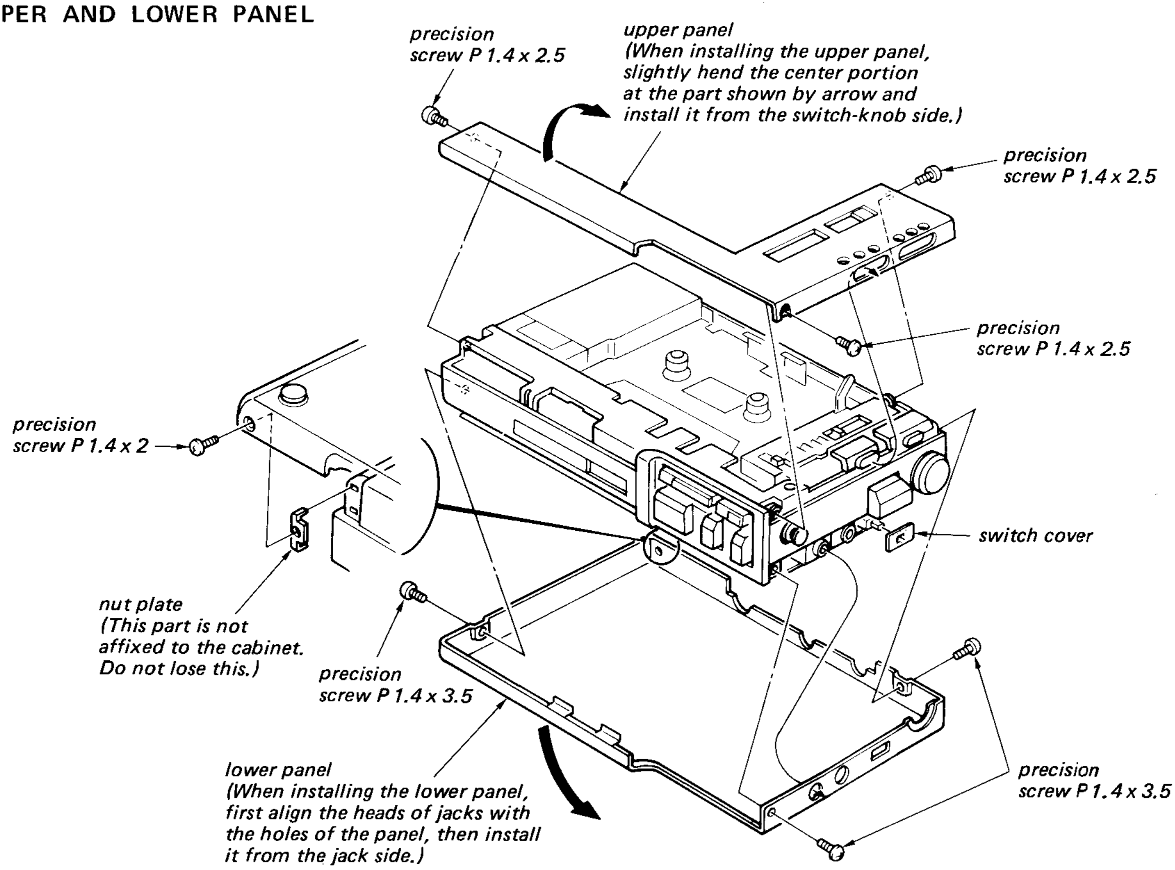

cassette lid
poly-washer 1.2
precision
screw P 1.4 x 3

REEL PANEL

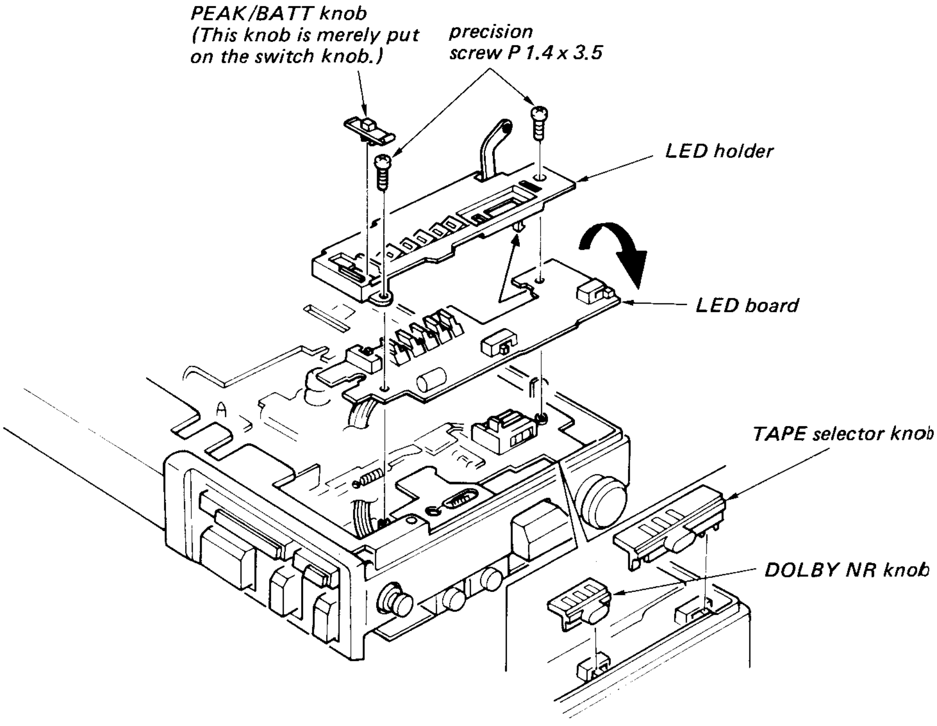

precision
screw P 1.4 x 1.6
reel panel

Note: When installing the reel panel, insert this protrusion first to under the head chassis.

UPPER AND LOWER PANEL

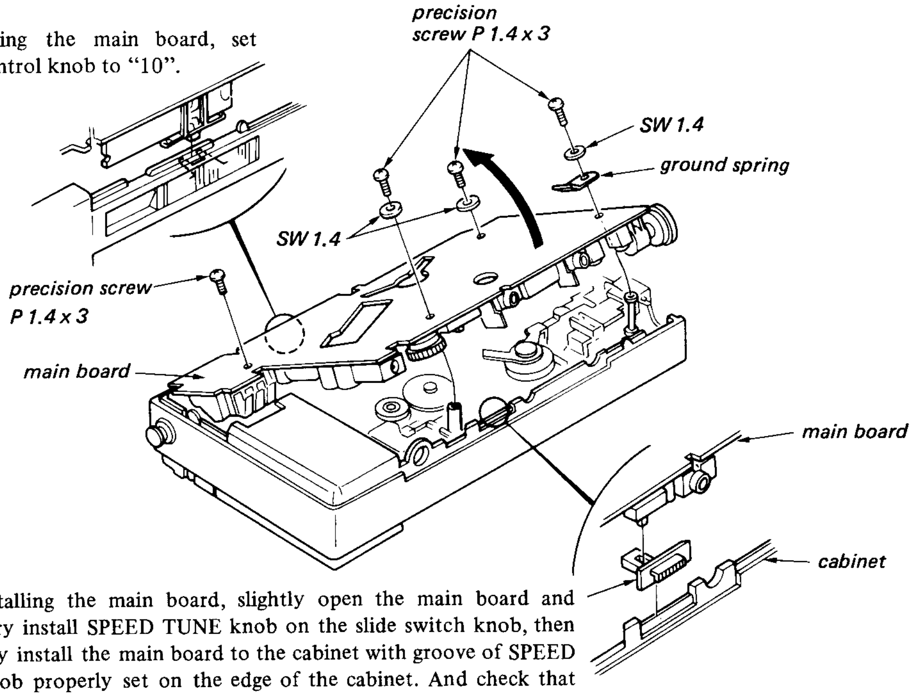

precision
screw P 1.4 x 2.5
upper panel
(When installing the upper panel, slightly hend the center portion at the part shown by arrow and install it from the switch-knob side.)
precision
screw P 1.4 x 2.5
precision
screw P 1.4 x 2.5
precision
screw P 1.4 x 2
switch cover
nut plate
(This part is not affixed to the cabinet. Do not lose this.)
precision
screw P 1.4 x 3.5
precision
screw P 1.4 x 3.5
lower panel
(When installing the lower panel, first align the heads of jacks with the holes of the panel, then install it from the jack side.)

LED HOLDER AND LED BOARD


PEAK/BATT knob
(This knob is merely put on the switch knob.)
precision
screw P 1.4 x 3.5
LED holder
LED board
TAPE selector knob
DOLBY NR knob

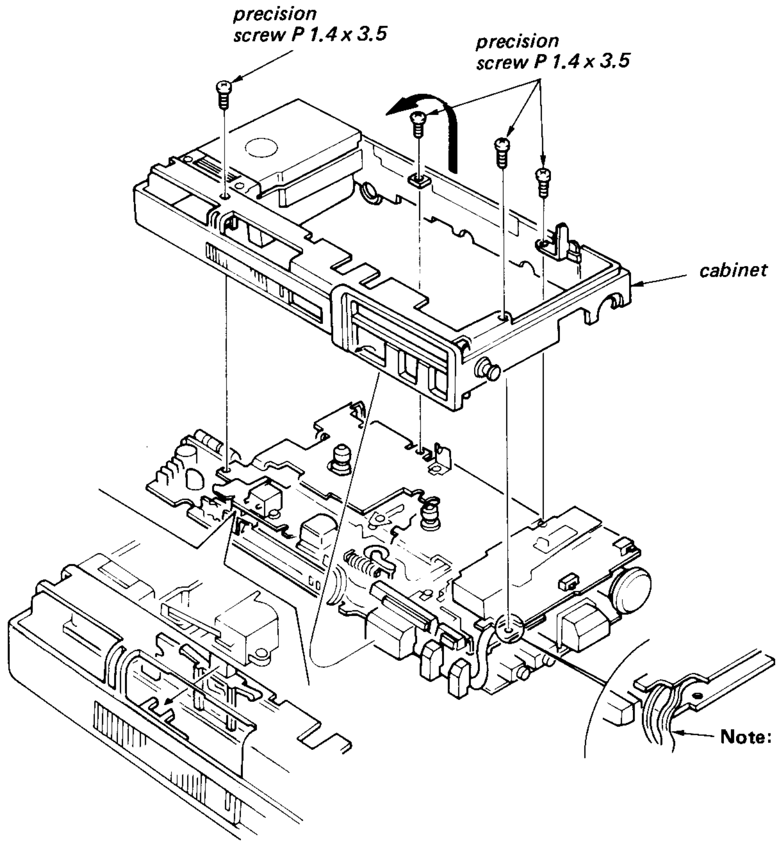
MAIN BOARD

Note: When installing the main board, set VOLUME control knob to "10".


precision screw P 1.4 x 3
SW 1.4
ground spring
SW 1.4
precision screw P 1.4 x 3
main board
main board
cabinet

Note: When installing the main board, slightly open the main board and preparatory install SPEED TUNE knob on the slide switch knob, then completely install the main board to the cabinet with groove of SPEED TUNE knob properly set on the edge of the cabinet. And check that the knob smoothly moves and the switch securely operates.

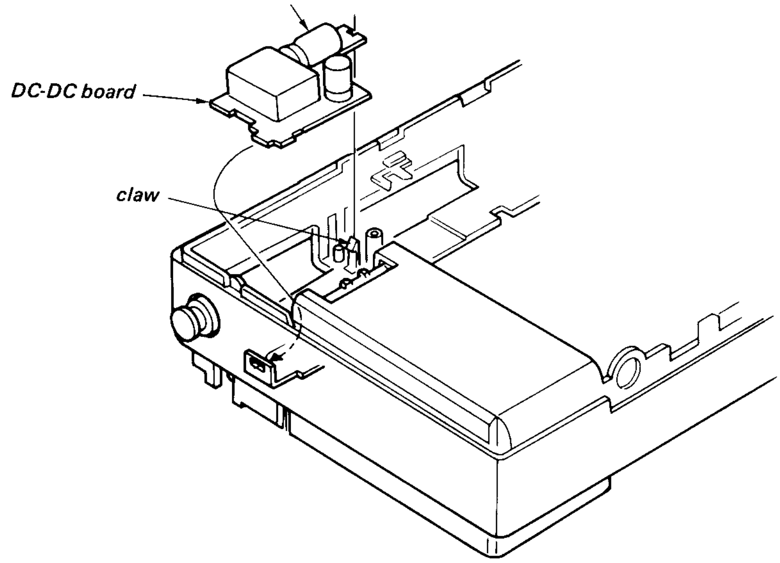
CABINET


precision screw P 1.4 x 3.5
precision screw P 1.4 x 3.5
cabinet

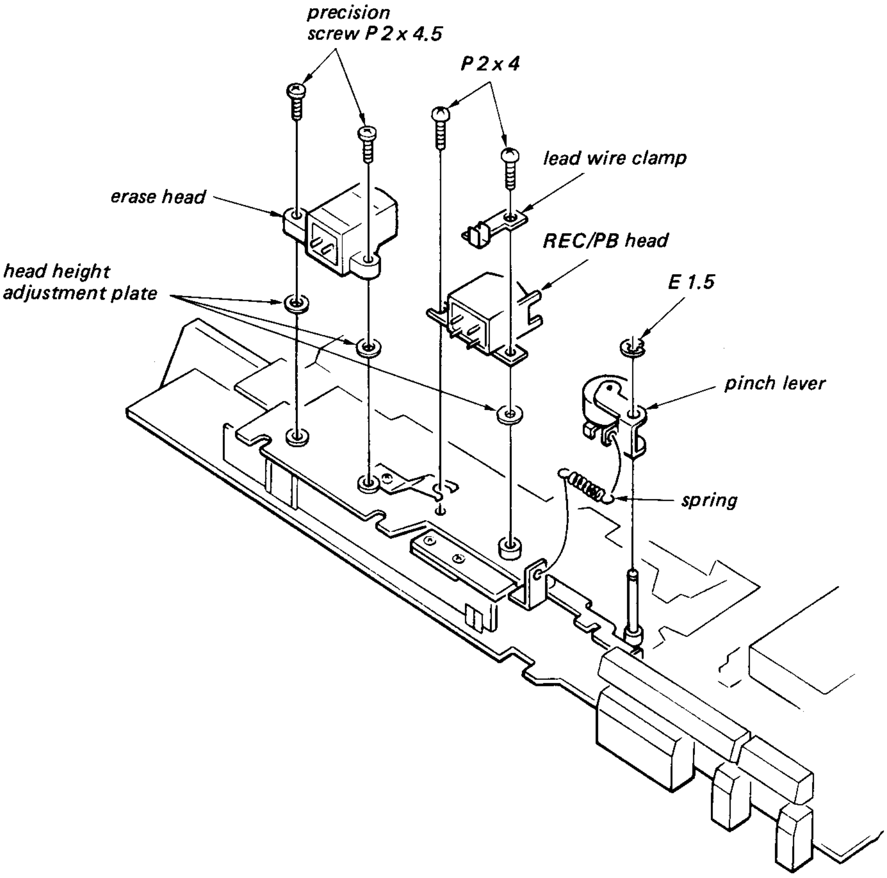
Note: When installing the cabinet, dress lead wires from the LED board to inside so they are not damaged by the boss of the cabinet.

DC-DC BOARD

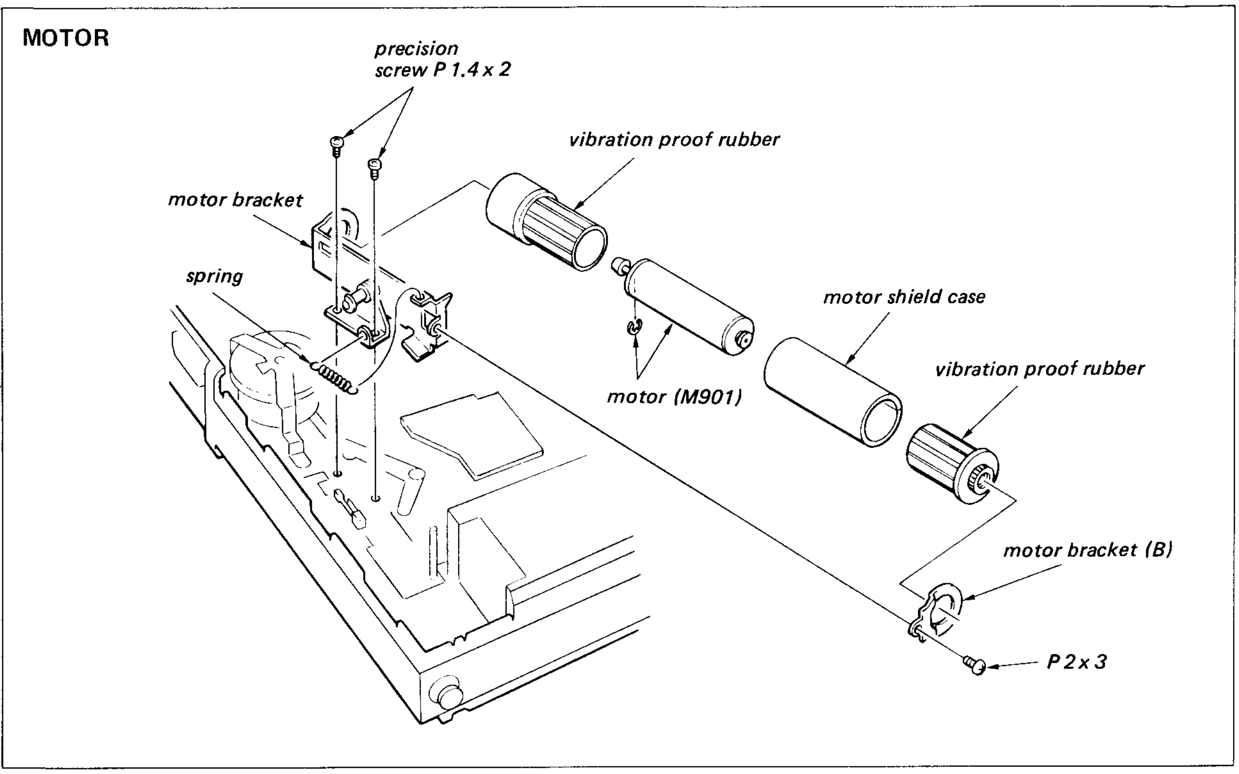
Note: When C316 is replaced, bend its lead diagonally and lay it on the DC-DC board not to touch components on the main board.


DC-DC board
claw

REC/PB, ERASE HEAD AND PINCH LEVER


precision screw P 2 x 4.5
P 2 x 4
lead wire clamp
erase head
REC/PB head
head height adjustment plate
E 1.5
pinch lever
spring

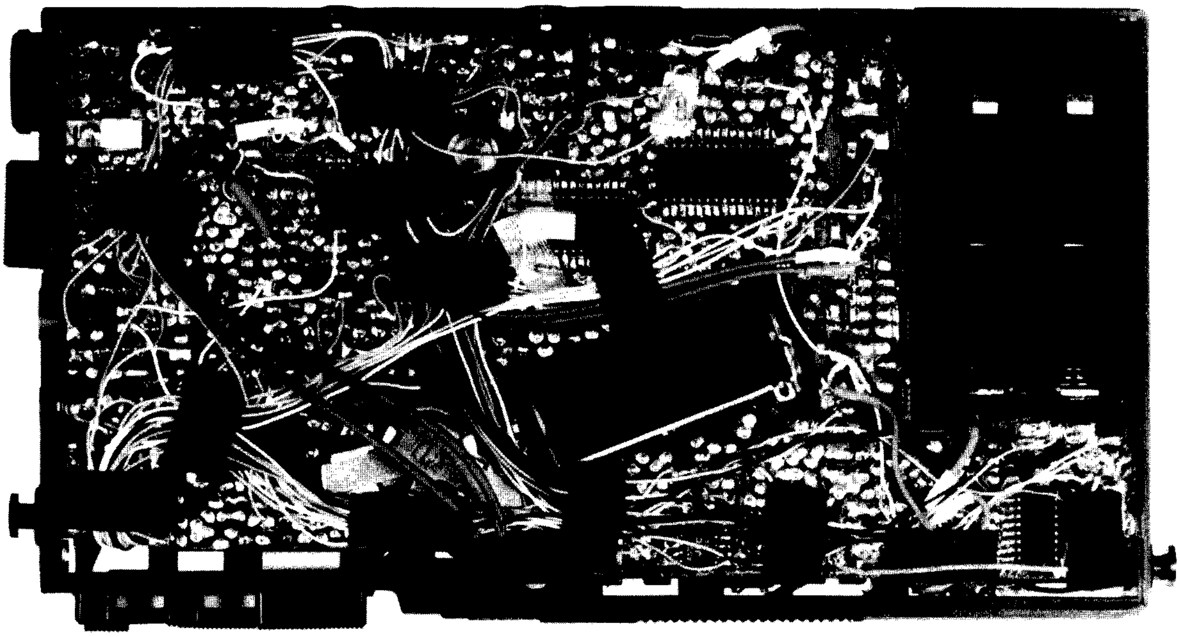
MOTOR


precision screw P 1.4 x 2
vibration proof rubber
motor bracket
spring
motor shield case
vibration proof rubber
motor (M901)
motor bracket (B)
P 2 x 3

◆

GENERAL NOTES ON SERVICING

Secure the lead wires and shielded wires to the main board with sections of adhesive tapes as shown below, otherwise proper operation of the unit may be degraded.



SECTION 3
ADJUSTMENTS

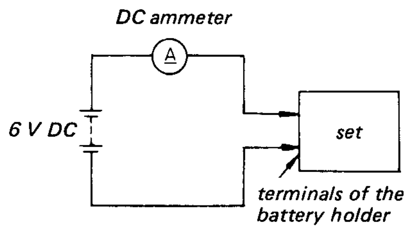
3-1. MECHANICAL ADJUSTMENTS AND MEASUREMENTS

PRECAUTION

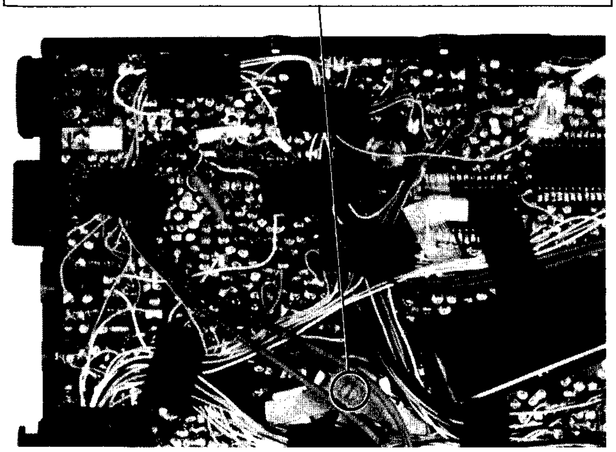
1. Clean the following parts with a denatured-alcohol-moistened swab:
   - record/playback head
   - erase head
   - capstan
   - pinch roller
   - rubber belts
   - idlers
2. Demagnetize the record/playback and erase head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Flywheel Thrust Play Adjustment

– Playback Mode –

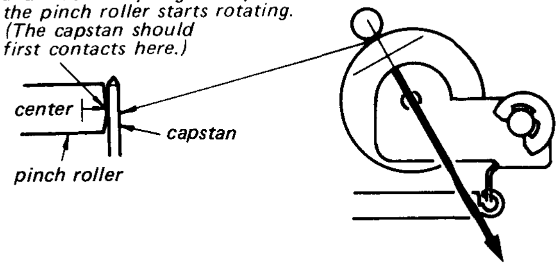


1. Turn the thrust screw counterclockwise until the screw tip leaves from the flywheel shaft.
2. Gradually turn the thrust screw clockwise to the position where the motor current suddenly increases.
3. Then, turn the thrust screw counterclockwise about ¼ turn from the position obtained in step 2.



Pinch Roller Pressure Measurement

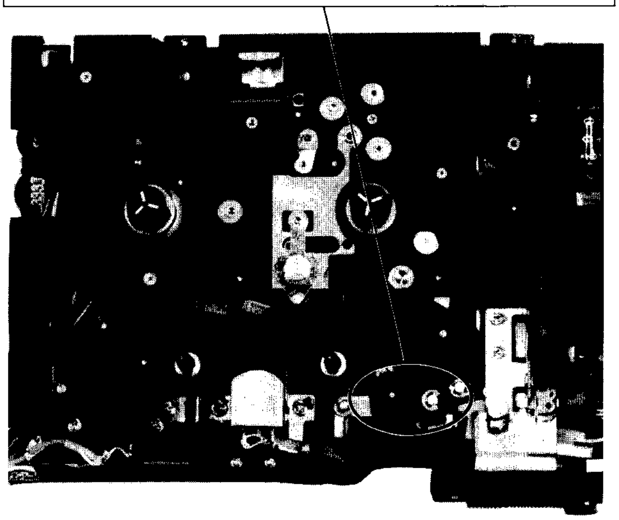
– Playback Mode –



❷ *Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating. (The capstan should first contacts here.)*

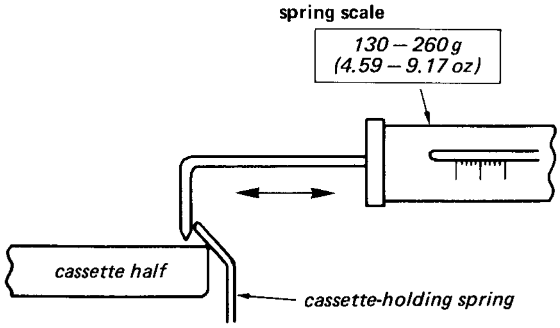
❶ **spring scale**

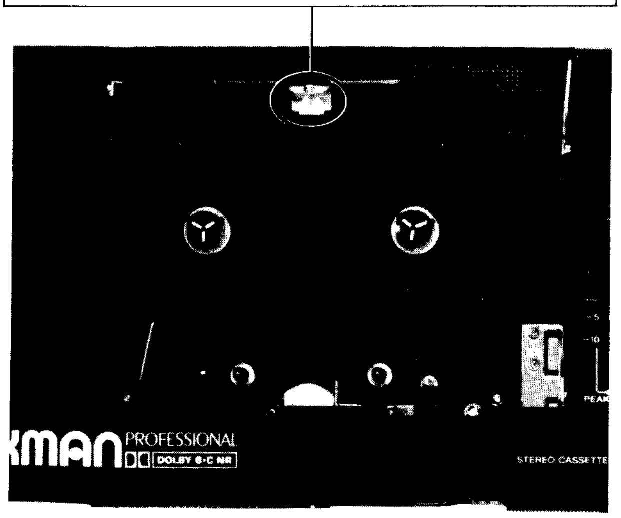
200 – 280 g (7.05 – 9.88 oz)



Cassette-holding Spring Adjustment

1. Pull the spring scale outward until the cassette-holding spring releases from the cassette half.
2. Slowly return the spring scale back to the cassette half until the spring just touches the edge of the cassette half. Read the spring scale at this instant.
3. Adjust the spring by bending back and forth to satisfy the spring scale value.


spring scale
130 – 260 g
(4.59 – 9.17 oz)
cassette half
cassette-holding spring


PROFESSIONAL
DOLBY B-C NR
STEREO CASSETTE
PEAK

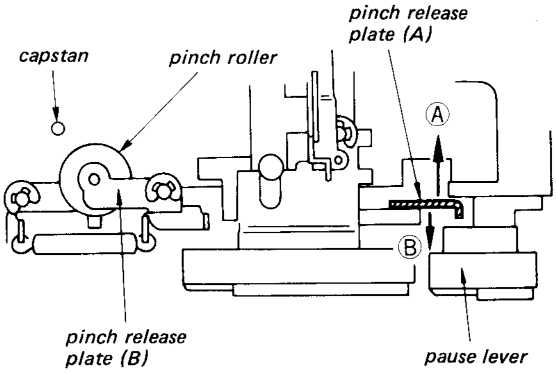
Pause Action Adjustment

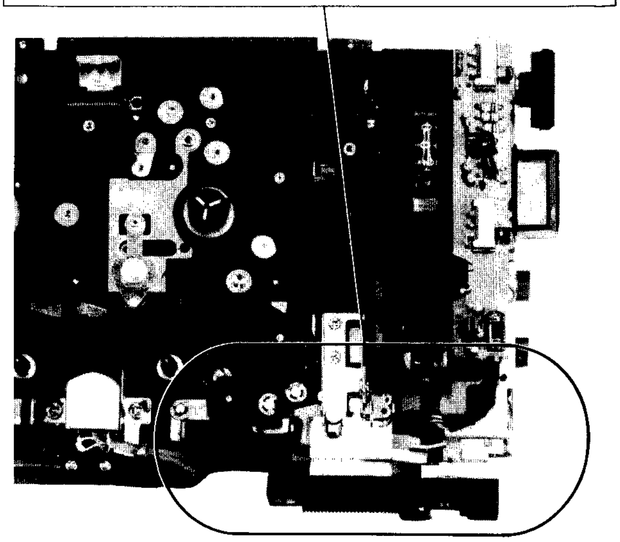
1. Insert a cassette tape and put into playback mode.
2. At this time, confirm that the pinch release plate (A) does not touch on the pinch release plate (B) and the pause lever.
3. Check for the lock timing when the pause button is pushed in playback mode.

Lock timing: The tape is stopped without placing in cue mode and is not reversed after the pinch roller is detached from the capstan.

4. When pushing the pause button again to restart the set, make sure that the pinch roller is contact with the capstan after the unit begins to take the tape up without placing in cue mode. Make sure that the take-up reel table does not rotate after the pinch roller is contact with the capstan.

When putting the pause button ON or OFF.	Adjustment of the pinch release plate (A)
In case of CUE mode.	Bend to Ⓐ side.
In case of reversing.	Bend to Ⓑ side.

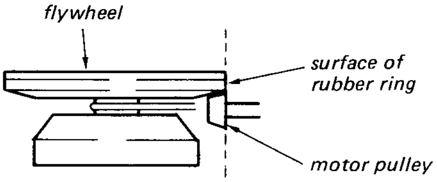

capstan
pinch roller
pinch release plate (A)
Ⓐ
Ⓑ
pinch release plate (B)
pause lever



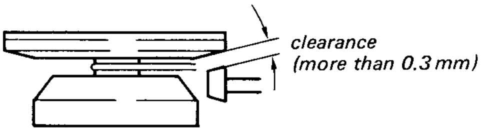
Motor Pressure Measurement

– Playback Mode –

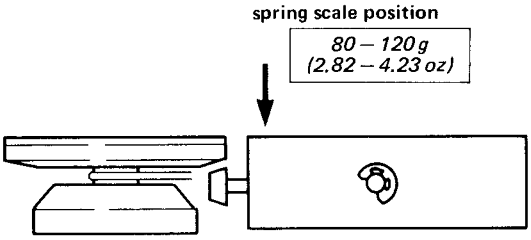
1. The motor pulley's inner edge (large side) should not extend from the edge of the flywheel's rubber ring.

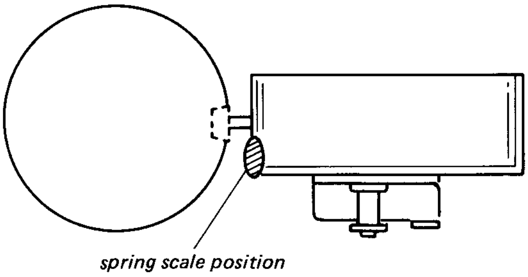

flywheel
surface of rubber ring
motor pulley

2. When the mode is changed from playback by slowly pressing the stop button, the motor pulley and rubber surface of the flywheel should have clearance.


clearance
(more than 0.3 mm)

3. In playback mode, put a spring scale vertically on the edge of the motor bracket as shown below, push the spring scale down vertically until the motor pulley just detaches from the flywheel's rubber ring and read the spring scale at this instance.


spring scale position
80 – 120 g
(2.82 – 4.23 oz)

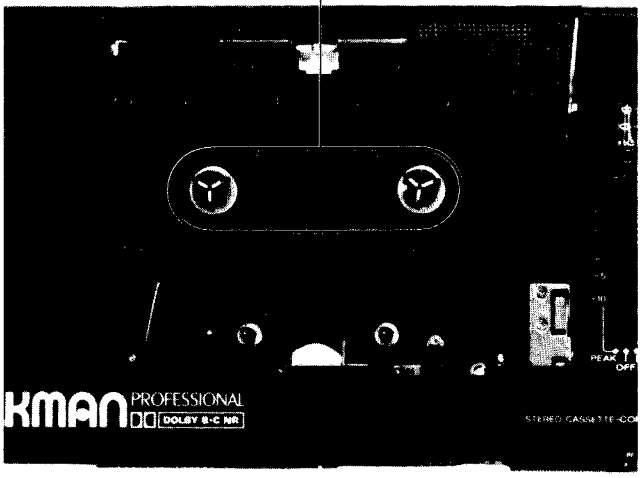

spring scale position

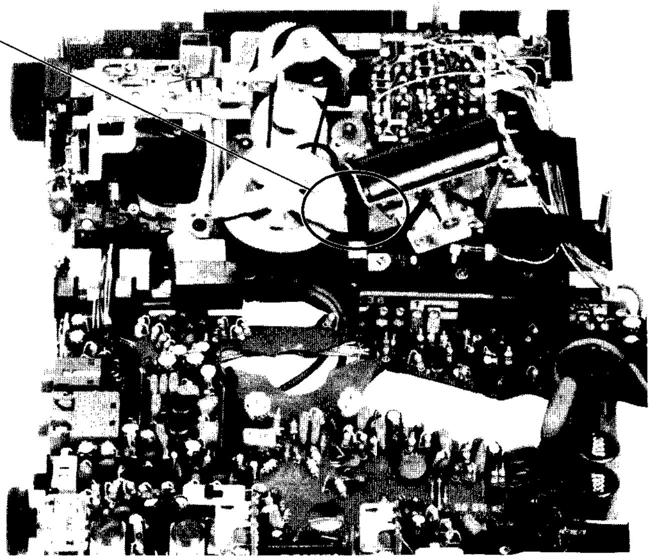
Torque Measurement

Torque	Torque Meter	Meter Reading
FWD	CQ-102C	25 – 43 g•cm (0.35 – 0.6 oz•inch)
Back Tension		1.5 – 3.5 g•cm (0.02 – 0.05 oz•inch)
FF•REW	CQ-201B	more than 75 g•cm (more than 1.04 oz•inch)

Tape Tension Measurement

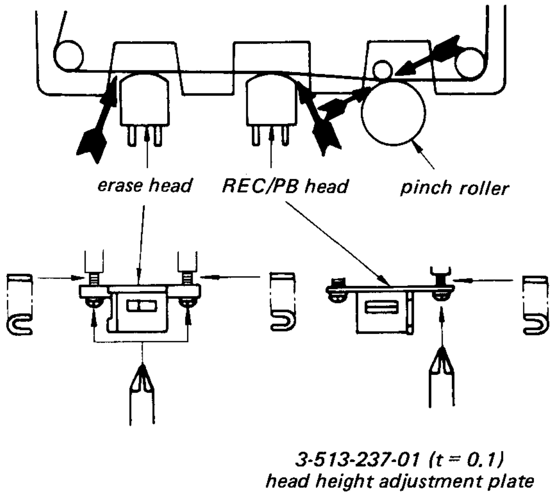
Tension Meter	Meter Reading
CQ-403A	more than 65 g (more than 2.29 oz)

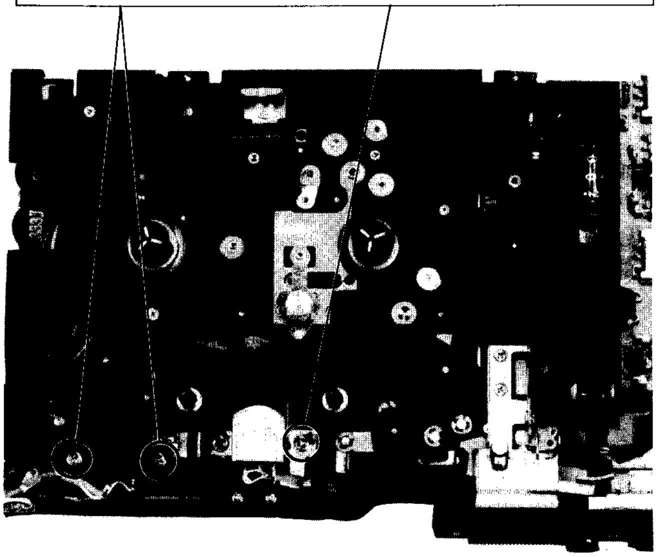

KMAN PROFESSIONAL
DOLBY B-C NR
PEAK
OFF
STEREO CASSETTE CO



Tape Path Adjustment

1. Insert a mirror cassette (CQ-009C).
2. In playback mode and viewing from the front, confirm that there is no tape curl and tape twist at portions shown by arrow.
3. If there is tape curl and tape twist, adjust the head heights by using the adjustment plate. (Specifically no tape curls should exist at the lower sides of the tape guides.)


erase head
REC/PB head
pinch roller
3-513-237-01 (t = 0.1)
head height adjustment plate



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the TAPE switches according to the tape as follows.

Tape	TAPE switch
CS-15	NORM
CS-26	CrO_2
CS-40	METAL

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch . . . . OFF
TAPE switch . . . . NORM
MIC ATT switch . . . . 0 dB
PEAK/BATT switch . . . . PEAK
SPEED TUNE switch . . . . . . OFF
SPEED TUNE control . . . . . . center

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300Ω	10kΩ
input level	0.77mV (−60dB)	0.25V (−10dB)

Standard Output Level

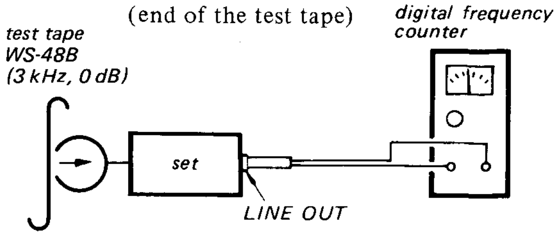
	LINE OUT	HEAD-PHONES
load impedance	47kΩ	32Ω
output level	0.254V (−9.8dB)	0.25V (−10dB)

Tape Speed Adjustment

Note: Perform this adjustment after the Record/playback Head Azimuth Adjustment.

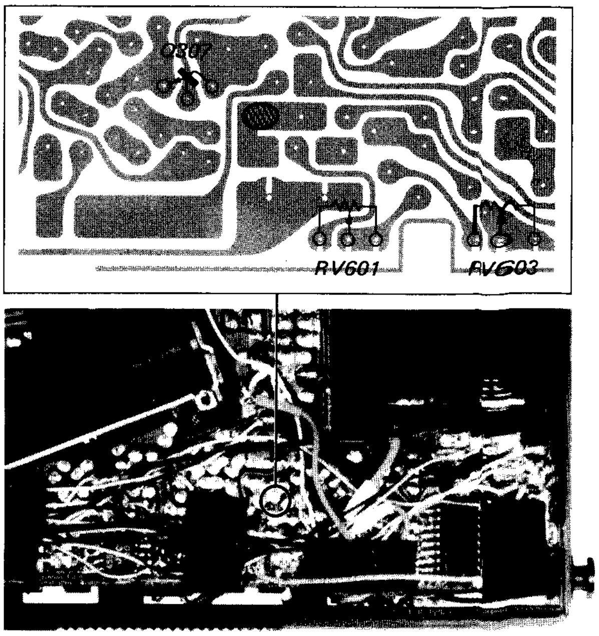
Procedure:

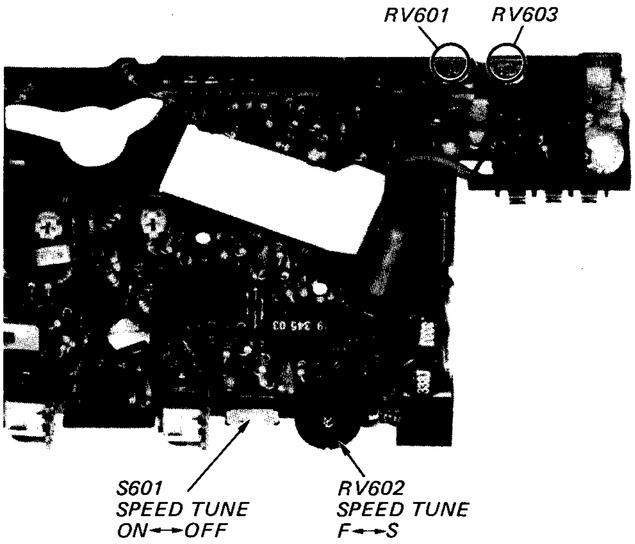
Mode: playback
(end of the test tape)



1. Set SPEED TUNE switch to OFF.
2. Unsolder the solder bridge and open the bridged patterns shown below.
3. Turn RV601 so that frequency reading becomes in 3,090 Hz ± 10 Hz.
4. Resolder the adjustment patterns opened in step 2 above. Now frequency reading should be 3,000 Hz ± 9 Hz.
5. Set SPEED TUNE switch to ON, and SPEED TUNE control to its center position.
6. Turn RV603 so that frequency reading becomes in 3,000 Hz ± 10 Hz.
7. Set SPEED TUNE control to maximum position in "S" direction. Now frequency reading should be below 2,884 Hz.
8. Set SPEED TUNE control to maximum stop in "F" direction. Now the frequency should be above 3,120 Hz.
9. Set SPEED TUNE control back to center position.

Adjustment Location: *– main board –*





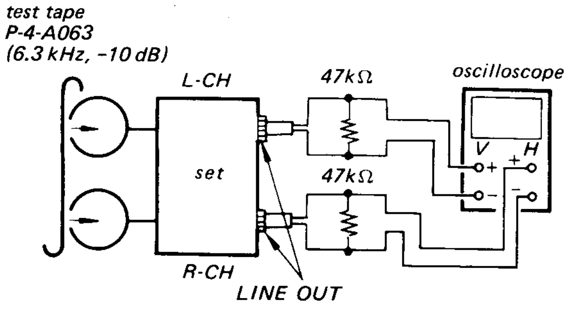
Record/playback Head Azimuth Adjustment

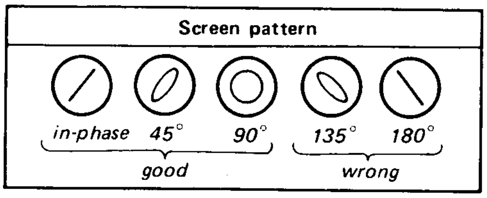
Setting:

RV101, 201 (playback level): mechanical mid

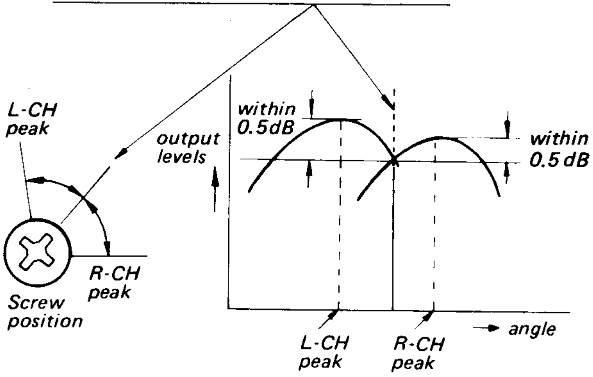
Procedure:

1. Mode: playback


test tape
P-4-A063
(6.3 kHz, -10 dB)
L-CH
47kΩ
oscilloscope
set
47kΩ
V
H
+
+
-
-
R-CH
LINE OUT

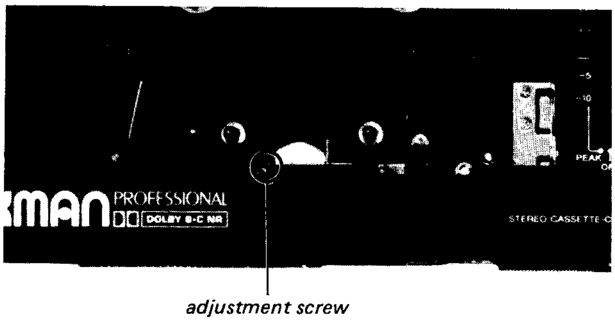

Screen pattern
in-phase
45°
90°
135°
180°
good
wrong

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



3. After adjustment, apply locking compound to the adjusted screw.

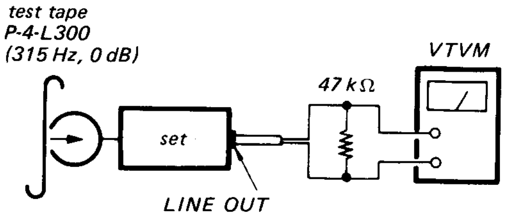
Adjustment Location:


PROFESSIONAL
DOLBY B-C NR
STEREO CASSETTE
PEAK
adjustment screw

Playback Level Adjustment

Procedure:

Mode: playback


test tape
P-4-L300
(315 Hz, 0 dB)
VTVM
47 kΩ
set
LINE OUT

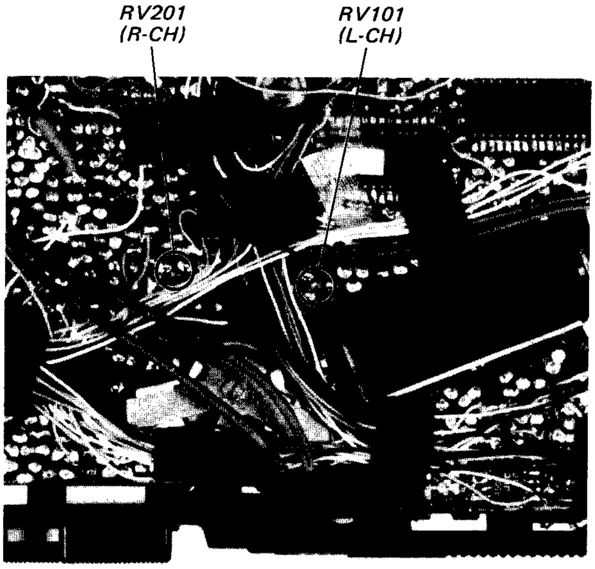
Specification:

LINE OUT level: 0.25 – 0.26 V
(–10 to –9.6 dB)

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

– *main board* –


RV201
(R-CH)
RV101
(L-CH)

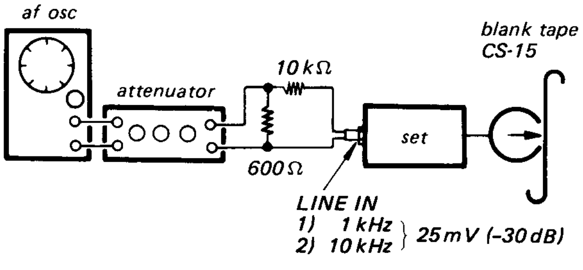
Record Bias Adjustment

Setting:

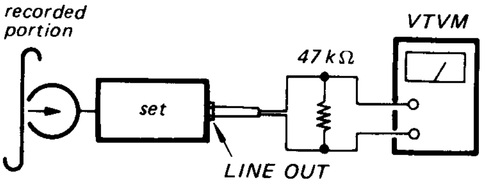
REC LEVEL control: standard record
LINE IN : -10 dB
LINE OUT : -9.8 dB

Procedure:

1. Mode: record


af osc
attenuator
10 kΩ
600 Ω
set
blank tape
CS-15
LINE IN
1) 1 kHz
2) 10 kHz
25 mV (-30 dB)

2. Mode: playback


recorded portion
set
47 kΩ
VTVM
LINE OUT

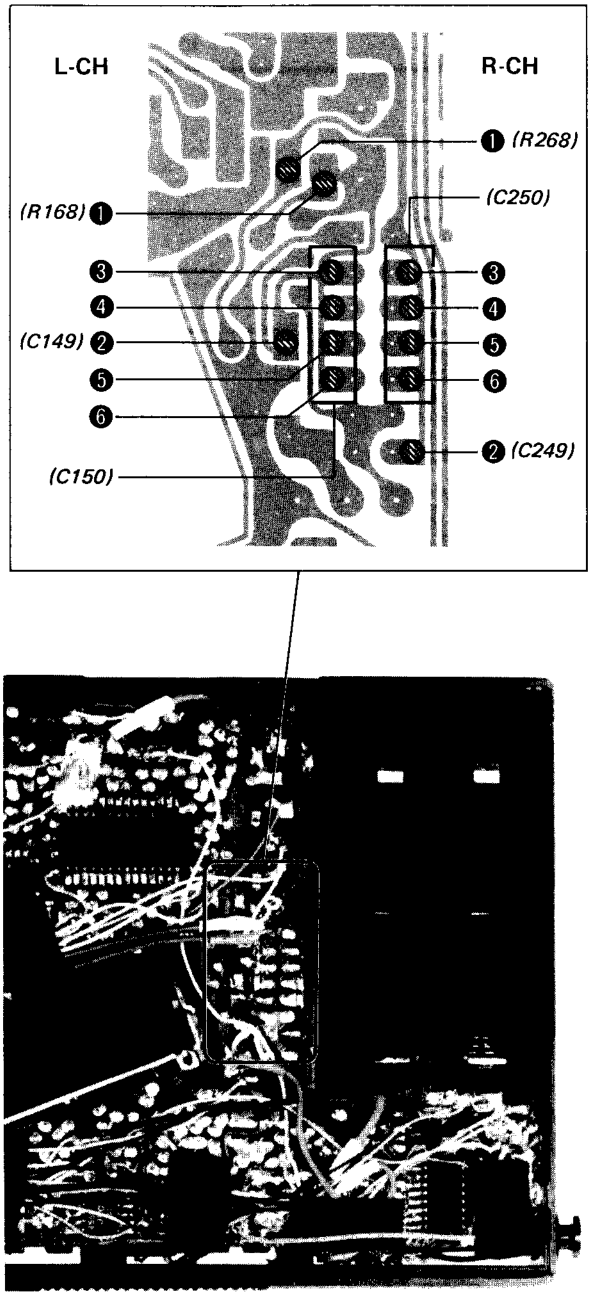
Confirm that the LINE OUT level of 10 kHz signal is 0 ± 0.5 dB relative to that of 1 kHz.

3. If it is not within 0 ± 0.5 dB, change the pattern connection and repeat the steps 1 and 2.

Note: When the conductive patterns ❷ – ❻ are connected, and VTVM does not read 0 ±0.5 dB, disconnect the pattern ❶. Repeat the steps 1 – 3.

Adjustment Location:

– main board –


L-CH
R-CH
❶ (R268)
(C250)
(R168) ❶
❸
❹
(C149) ❷
❺
❻
(C150)
❸
❹
❺
❻
❷ (C249)

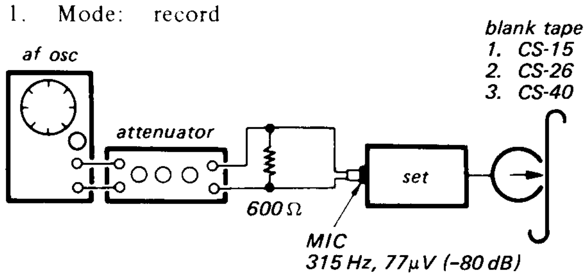
Record Level Adjustment

Setting:

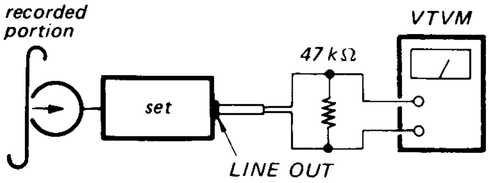
TAPE switch: changes over according as tape type

Procedure:

1. Mode: record



2. Mode: playback



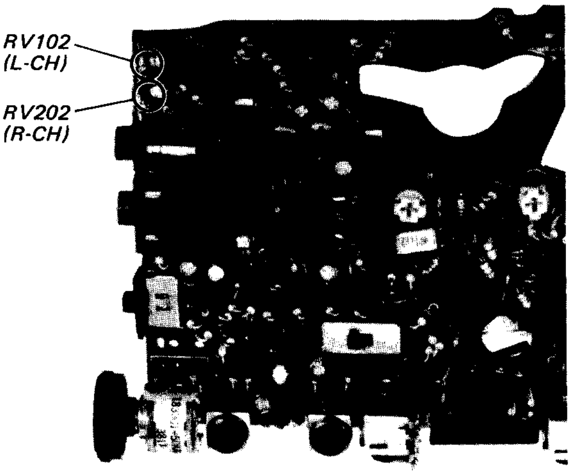
Insert a NORM tape (CS-15) and put into playback mode, adjust RV102 (L-CH) and RV202 (R-CH) to obtain the specified output level. Next, insart a CrO_2 tape (CS-26), METAL tape (CS-40) and put into playback mode, confirm that the output level is specified value.

Specification:

Tape	TAPE switch	Standard Output Level
CS-15	NORM	24 – 26.5 mV (-30.3 to -29.3 dB)
CS-26	CrO_2	21 – 30 mV (-31.3 to -28.3 dB)
CS-40	METAL	

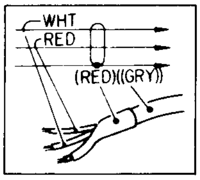
Adjustment Location:

– main board –



Note: FOR MOUNTING DIAGRAM

- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ▨ : B + pattern
- ━━➡━━ : signal path
- ━━━━➡ : L-CH signal path
- ━━━━➡ : R-CH signal path

Note: FOR SCHEMATIC DIAGRAM

- Components for right channel have same values as for left channel. Reference numbers are coded from 201.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- ➡ : signal path
- ▭ : adjustment for repair.
- ——— : B+ bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions.
  no mark: playback
  ( ) : record
  [ ] : rewind
  < > : fast forward
  (( )) : pause
  I: NORM, II: CrO_2, IV: METAL } TAPE switch
- Voltage variations may be noted due to normal production tolerances.
- AC voltage readings with a VTVM.
- Total current is measured with no cassette installed.

Note: Voltages are measured with a VOM (50kΩ/V).

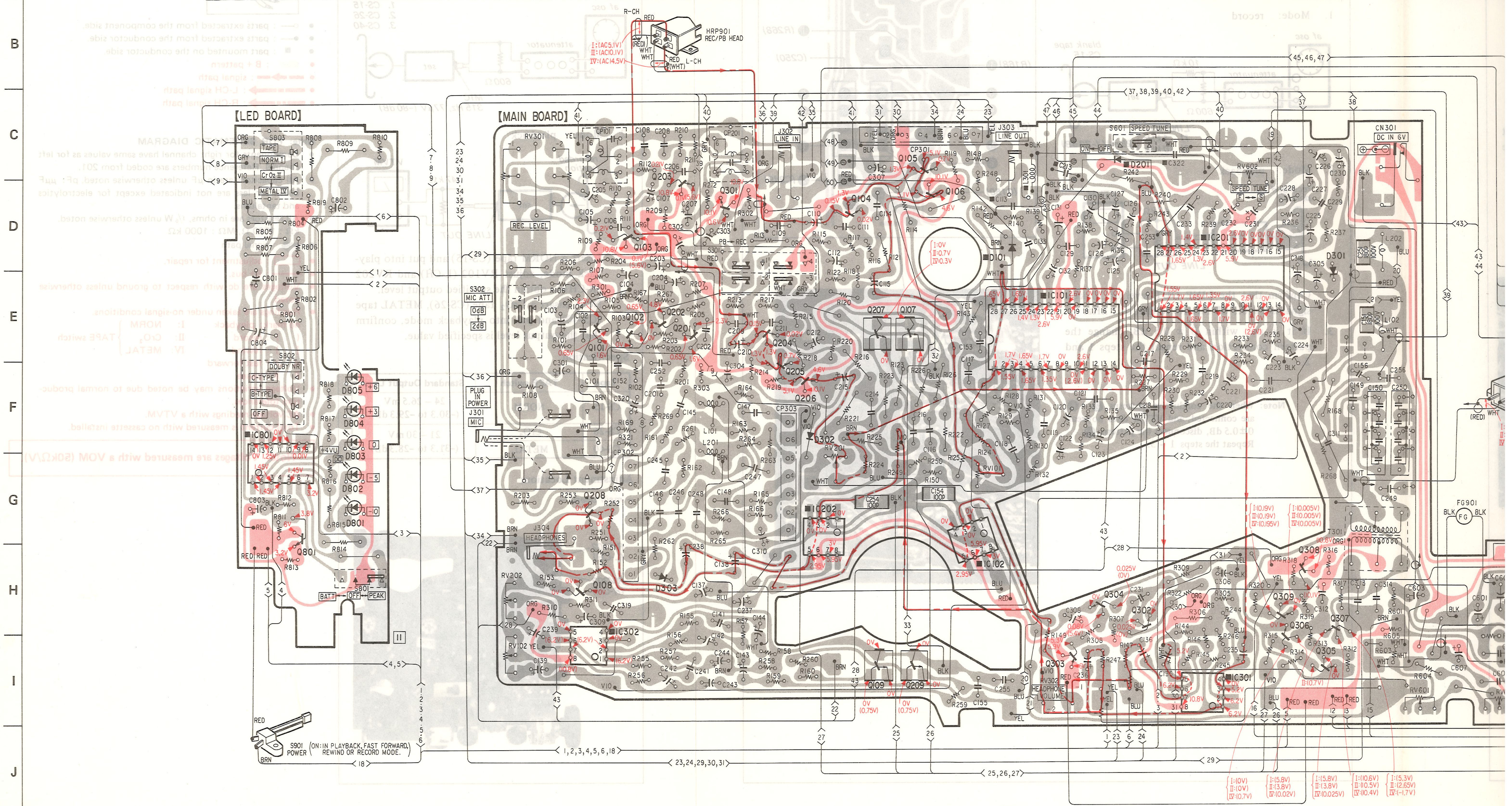
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

— Conductor Side —

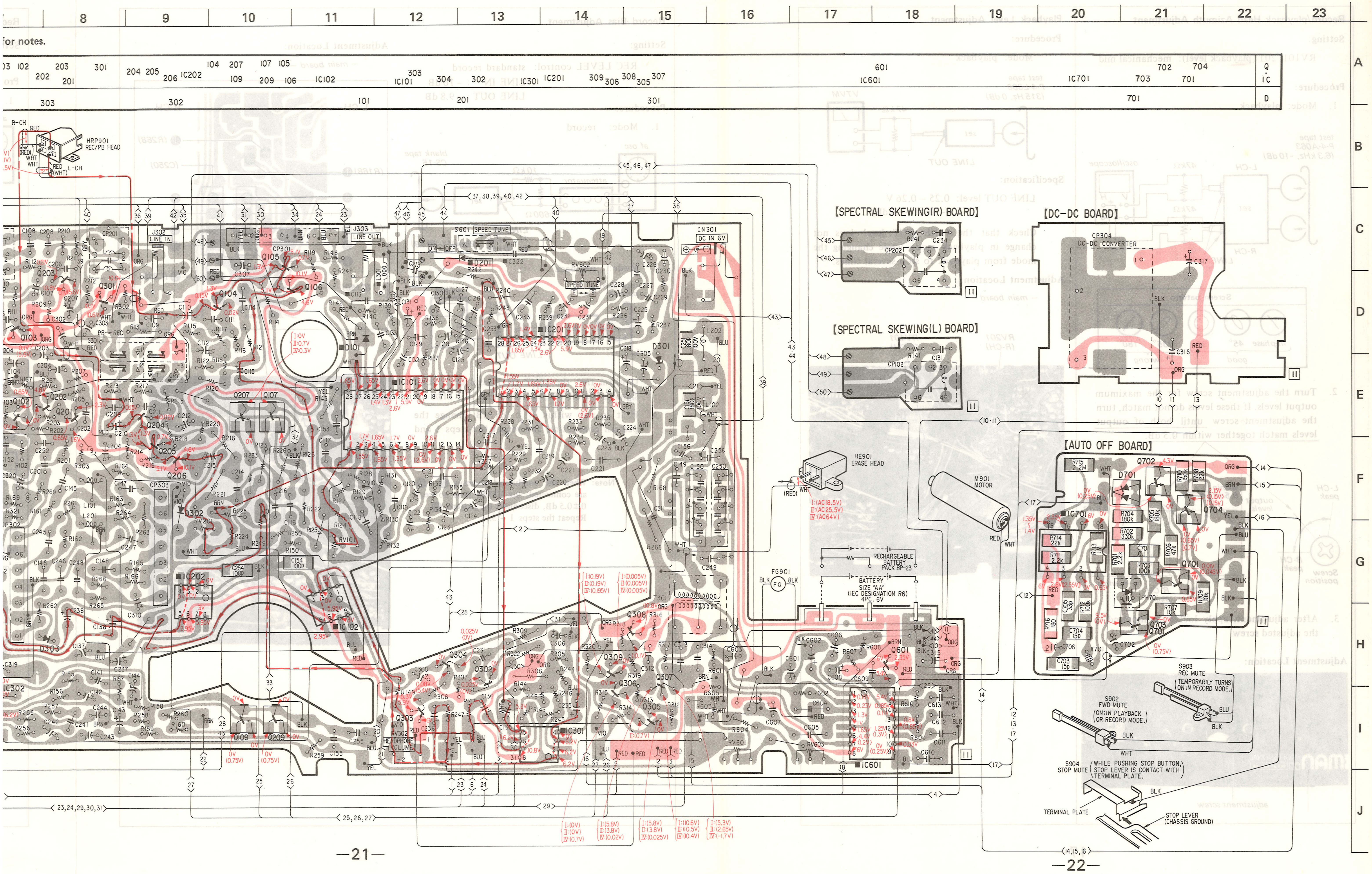
- Refer to page 26 for semiconductor lead layouts.
- Refer to page 19 for notes.

Q IC	IC801 801 108 208 101 IC302 103 102 202 203 201 301 204 205 206 IC202 104 207 109 107 209 105 106 IC102 IC101 303 304 302 IC301 IC201 309 306 308 305 307
D	805 804 803 802 801 303 302 101 201 301


A
B
C
D
E
F
G
H
I
J
[LED BOARD]
[MAIN BOARD]
HRP901 REC/PB HEAD
R-CH
L-CH
I:(AC5.1V)
II:(AC10.1V)
IV:(AC14.5V)
S803 TAPE NORM CrO2 METAL
S802 DOLBY NR C-TYPE B-TYPE OFF
IC801
Q801
D801 D802 D803 D804 D805
S801 BATT OFF PEAK
S901 POWER (ON: IN PLAYBACK, FAST FORWARD, REWIND OR RECORD MODE.)
J302 LINE IN
J303 LINE OUT
S601 SPEED TUNE ON OFF
RV602 SPEED TUNE
CN301 DC IN 6V
S302 MIC ATT 0dB 20dB
J301 PLUG IN POWER MIC
J304 HEADPHONES
RV302 HEADPHONE VOLUME
REC LEVEL
IC101
IC102
IC201
IC202
IC301
IC302
Q107 Q207
Q108 Q208
Q109 Q209
D101 D201 D301 D302 D303
T301
FG901
L102 L202
RV101 RV201 RV202 RV102 RV301 RV601
45,46,47
37,38,39,40,42
1,2,3,4,5,6,18
23,24,29,30,31
25,26,27
I:(0V) II:(0V) IV:(0.7V)
I:(5.8V) II:(3.8V) IV:(0.02V)
I:(5.8V) II:(3.8V) IV:(0.025V)
I:(0.6V) II:(0.5V) IV:(0.4V)
I:(5.3V) II:(2.65V) IV:(-1.7V)
I:(0.9V) II:(0.9V) IV:(0.95V)
I:(0.005V) II:(0.005V) IV:(0.005V)

for notes.

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
03 102	203 202 201 301	204 205 206 IC202	104 207 109 107 105 209 106	IC102	303 IC101 304	302 IC301 IC201	309 306 308 305	307			601 IC601		IC701	702 704 703 701		Q IC
	303	302		101	201			301						701		D



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A
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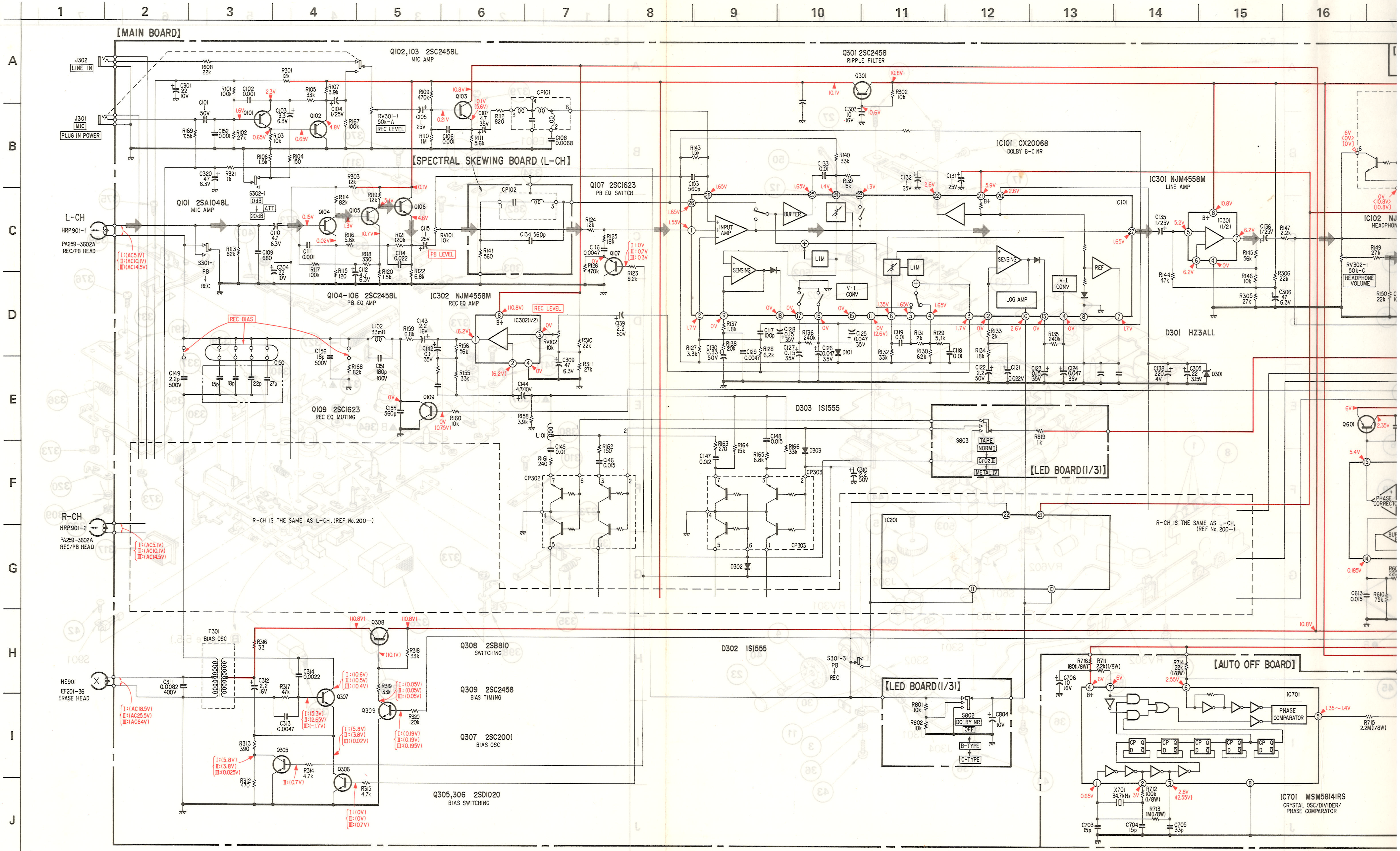
D
E
F
G
H
I
J
R-CH
L-CH
HRP901 REC/PB HEAD
J302 LINE IN
J303 LINE OUT
S601 SPEED TUNE
RV602 SPEED TUNE
CN301 DC IN 6V
IC101
IC201
IC102
IC202
IC301
IC601
IC701
[SPECTRAL SKEWING(R) BOARD]
[SPECTRAL SKEWING(L) BOARD]
[DC-DC BOARD]
CP304 DC-DC CONVERTER
[AUTO OFF BOARD]
HE901 ERASE HEAD
M901 MOTOR
FG901
RECHARGEABLE BATTERY PACK BP-23
BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PC. 6V
RV302 HEADPHONE VOLUME
S903 REC MUTE (TEMPORARILY TURNS ON IN RECORD MODE.)
S902 FWD MUTE (ON:IN PLAYBACK OR RECORD MODE.)
S904 STOP MUTE (WHILE PUSHING STOP BUTTON, STOP LEVER IS CONTACT WITH TERMINAL PLATE.)
TERMINAL PLATE
STOP LEVER (CHASSIS GROUND)
I:(0V) II:(0V) IV:(0.7V)
I:(5.8V) II:(3.8V) IV:(0.02V)
I:(5.8V) II:(3.8V) IV:(0.025V)
I:(0.6V) II:(0.5V) IV:(0.4V)
I:(5.3V) II:(2.65V) IV:(-1.7V)
I:(AC18.5V) II:(AC25.5V) IV:(AC64V)
I:0V II:0.7V IV:0.3V
<23,24,29,30,31>
<25,26,27>
<37,38,39,40,42>
<45,46,47>
<14,15,16>

4-2. SCHEMATIC DIAGRAM

● Refer to page 19 for notes.


1
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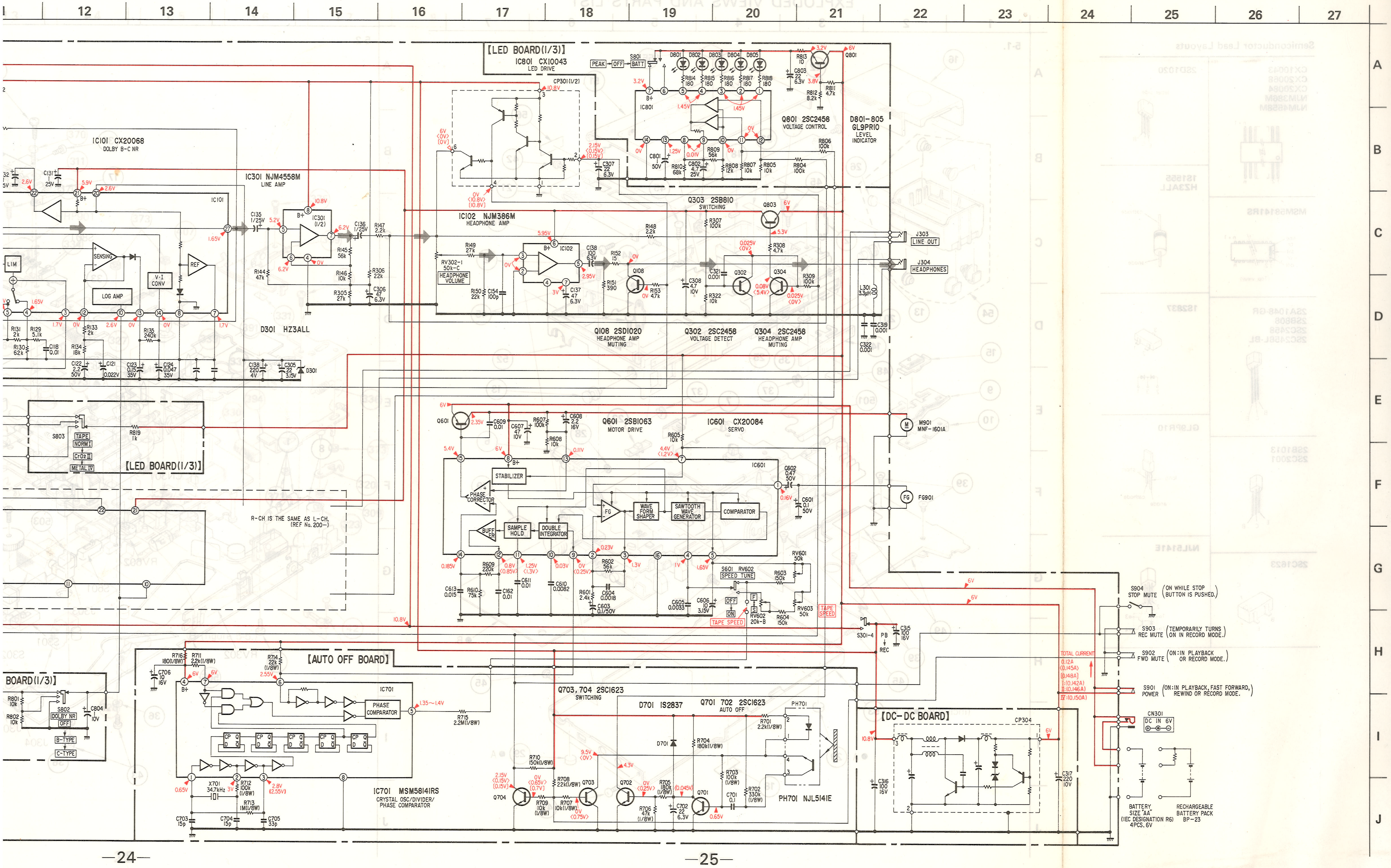
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
[MAIN BOARD]
J302 LINE IN
J301 MIC PLUG IN POWER
Q102,103 2SC2458L MIC AMP
Q301 2SC2458 RIPPLE FILTER
[SPECTRAL SKEWING BOARD (L-CH)]
IC101 CX20068 DOLBY B-C NR
IC301 NJM4558M LINE AMP
IC102 NJ
HEADPHONE
L-CH
HRP901-1
PA259-3602A REC/PB HEAD
Q101 2SA1048L MIC AMP
Q107 2SC1623 PB EQ SWITCH
Q104-106 2SC2458L PB EQ AMP
IC302 NJM4558M REC EQ AMP
REC BIAS
REC LEVEL
PB LEVEL
REC LEVEL
INPUT AMP
BUFFER
LIM
SENSING
V-I CONV
LOG AMP
REF
D301 HZ3ALL
Q109 2SC1623 REC EQ MUTING
D303 1S1555
[LED BOARD(1/3)]
TAPE NORM I CrO2 II METAL IV
S803
R-CH
HRP901-2
PA259-3602A REC/PB HEAD
R-CH IS THE SAME AS L-CH. (REF No. 200~)
CP302
CP303
D302
IC201
R-CH IS THE SAME AS L-CH. (REF No. 200~)
Q601
HEADPHONE VOLUME
RV302-1 50k-C
PHASE CORRECT
T301 BIAS OSC
HE901 EF201-36 ERASE HEAD
Q308 2SB810 SWITCHING
Q309 2SC2458 BIAS TIMING
Q307 2SC2001 BIAS OSC
Q305,306 2SD1020 BIAS SWITCHING
D302 1S1555
S301-3 PB REC
[LED BOARD(1/3)]
S802 DOLBY NR OFF B-TYPE C-TYPE
[AUTO OFF BOARD]
PHASE COMPARATOR
IC701 MSM5814IRS CRYSTAL OSC/DIVIDER/ PHASE COMPARATOR
X701 34.7kHz
RV301-1 50k-A REC LEVEL
S301-1 PB REC
S302-1 0dB ATT 20dB
CP101
CP102
L101
L102 33mH
I:(AC5.1V) II:(AC10.1V) III:(AC14.5V)
I:(AC18.5V) II:(AC25.5V) III:(AC64V)


12
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14
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18
19
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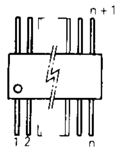
21
22
23
24
25
26
27
A
B
C
D
E
F
G
H
I
J
[LED BOARD(1/3)]
IC801 CX10043
LED DRIVE
PEAK
OFF
BATT
S801
D801 D802 D803 D804 D805
Q801 2SC2458
VOLTAGE CONTROL
D801–805 GL9PR10
LEVEL INDICATOR
IC101 CX20068
DOLBY B-C NR
IC301 NJM4558M
LINE AMP
IC102 NJM386M
HEADPHONE AMP
Q303 2SB810
SWITCHING
J303
LINE OUT
J304
HEADPHONES
RV302-1 50k-C
HEADPHONE VOLUME
SENSING
LIM
REF
V-I CONV
LOG AMP
D301 HZ3ALL
Q108 2SD1020
HEADPHONE AMP MUTING
Q302 2SC2458
VOLTAGE DETECT
Q304 2SC2458
HEADPHONE AMP MUTING
S803
TAPE
NORM I
CrO2 II
METAL IV
[LED BOARD(1/3)]
Q601 2SB1063
MOTOR DRIVE
IC601 CX20084
SERVO
STABILIZER
PHASE CORRECTOR
FG
WAVE FORM SHAPER
SAWTOOTH WAVE GENERATOR
COMPARATOR
BUFFER
SAMPLE HOLD
DOUBLE INTEGRATOR
M901 MNF-1601A
FG901
R-CH IS THE SAME AS L-CH. (REF No. 200–)
S601 RV602 SPEED TUNE
TAPE SPEED
OFF
ON
S904 STOP MUTE (ON WHILE STOP BUTTON IS PUSHED.)
S903 REC MUTE (TEMPORARILY TURNS ON IN RECORD MODE.)
S902 FWD MUTE (ON:IN PLAYBACK OR RECORD MODE.)
S901 POWER (ON:IN PLAYBACK, FAST FORWARD, REWIND OR RECORD MODE.)
S301-4
PB
REC
TOTAL CURRENT
CN301
DC IN 6V
[AUTO OFF BOARD]
IC701
PHASE COMPARATOR
Q703, 704 2SC1623
SWITCHING
D701 1S2837
Q701 702 2SC1623
AUTO OFF
PH701
PH701 NJL5141E
IC701 MSM5814IRS
CRYSTAL OSC/DIVIDER/ PHASE COMPARATOR
X701 34.7kHz
[DC-DC BOARD]
CP304
BOARD(1/3)
S802
DOLBY NR
OFF
B-TYPE
C-TYPE
BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PCS. 6V
RECHARGEABLE BATTERY PACK BP-23

SECTION 5

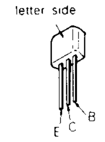
EXPLODED VIEWS AND PARTS LIST

Semiconductor Lead Layouts

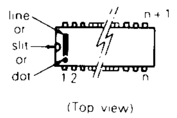
CX10043
CX20068
CX20084
NJM386M
NJM4558M



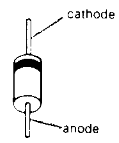
2SD1020


letter side
E C B

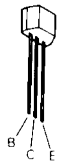
MSM58141RS


line or slit or dot
n+1
1 2
n
(Top view)

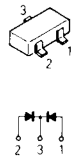
1S1555
HZ3ALL


cathode
anode

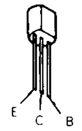
2SA1048-GR
2SB808
2SC2458
2SC2458L-BL



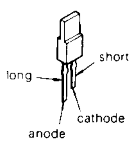
1S2837



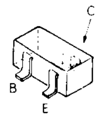
2SB1013
2SC2001



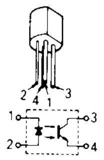
GL9PR10


short
long
cathode
anode

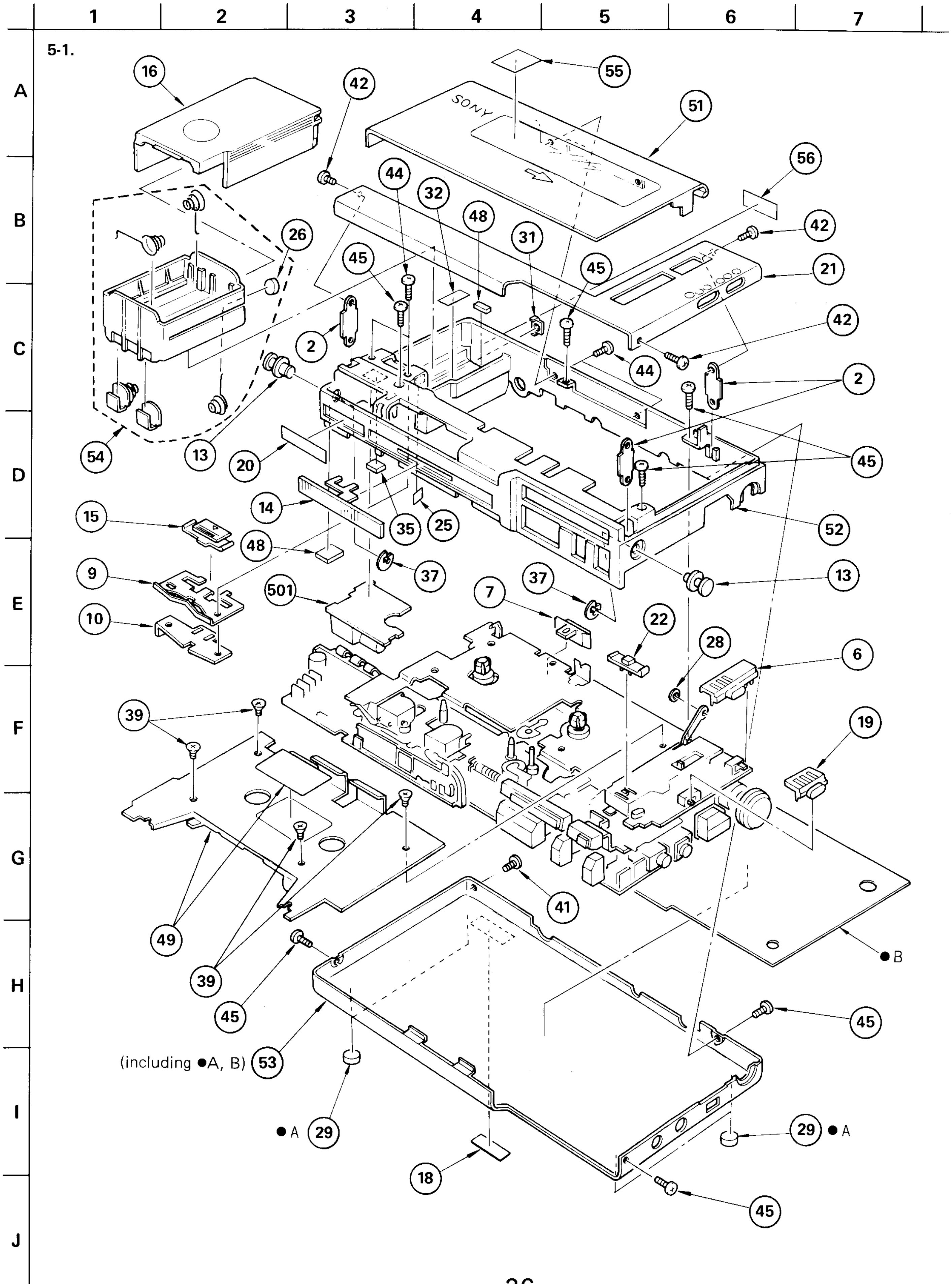
2SC1623



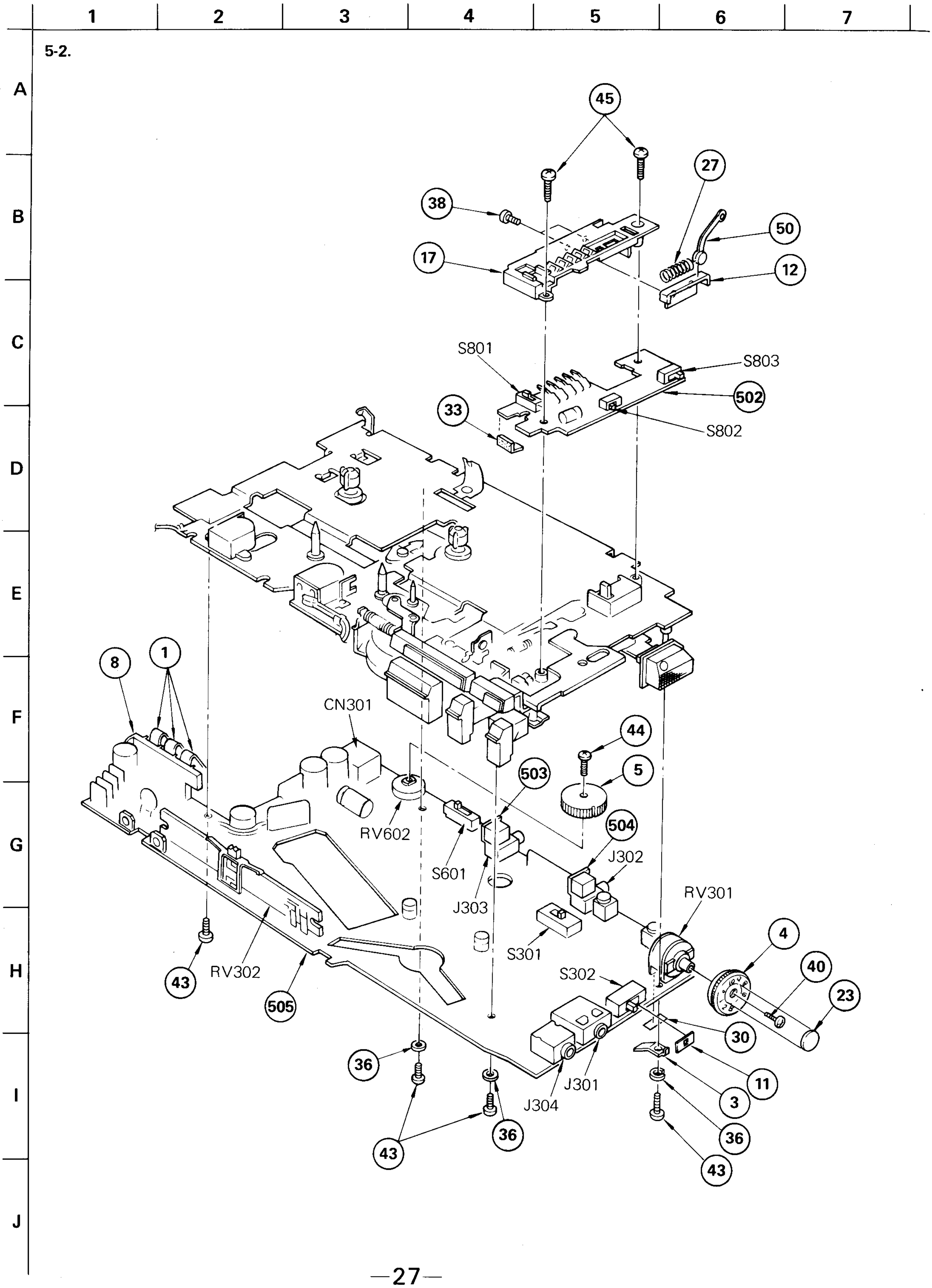
NJL5141E



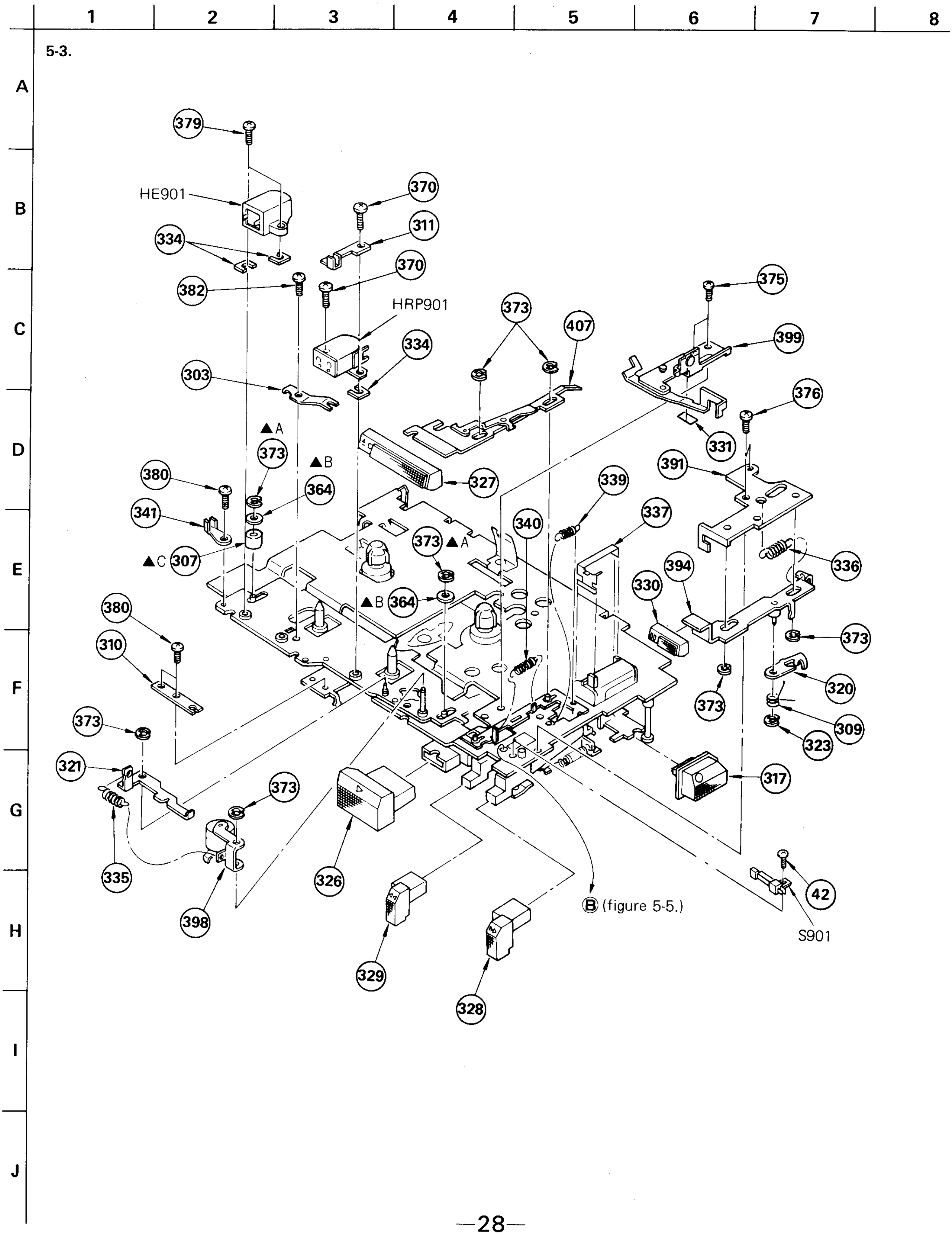
5-1.


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
SONY
16
42
55
51
56
44
32
48
31
42
21
26
45
45
42
2
44
2
45
54
13
20
14
35
25
52
15
48
9
37
501
7
37
13
10
22
28
6
39
19
41
49
39
45
●B
45
(including ●A, B)
53
●A
29
29
●A
18
45

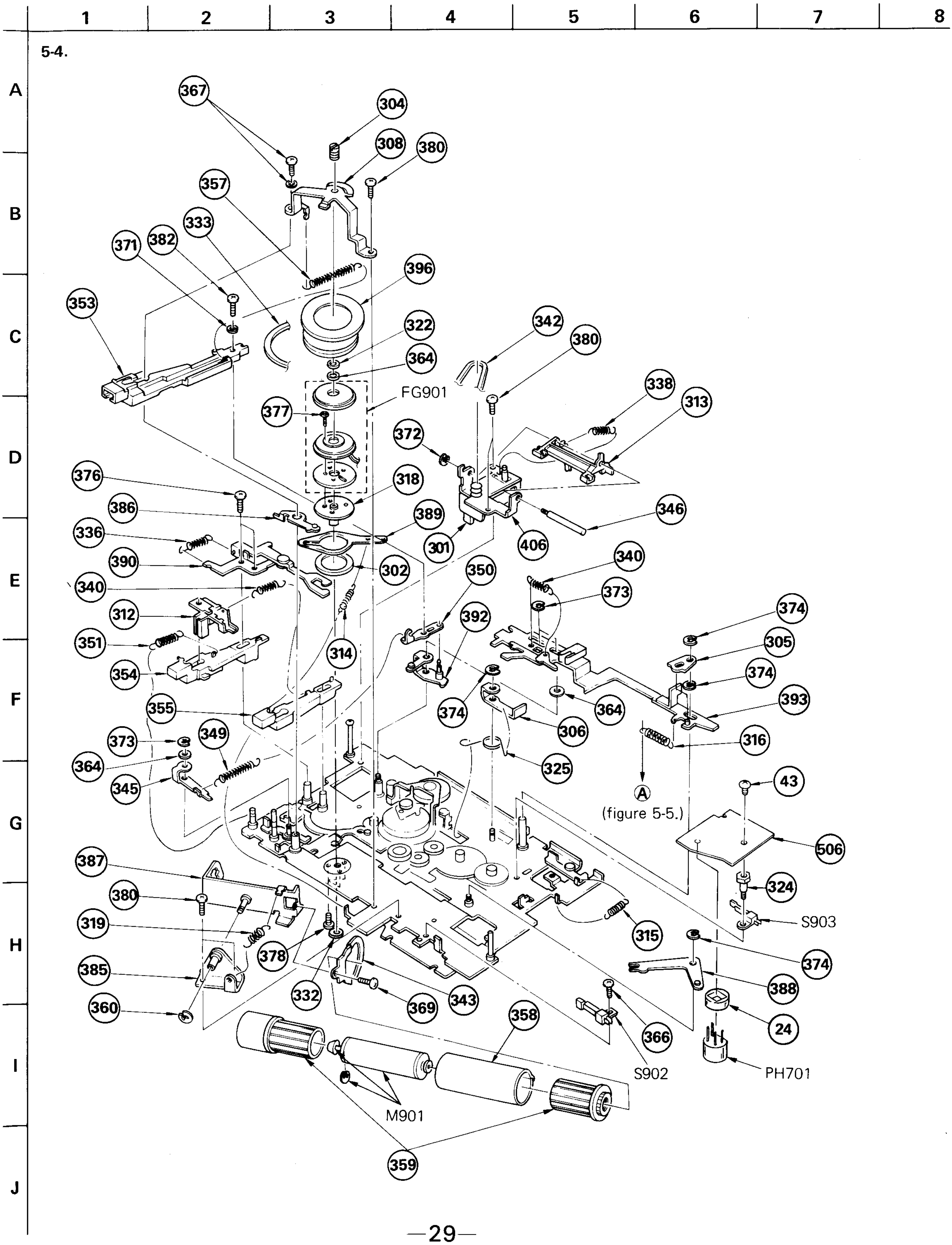
5-2.


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
45
27
38
50
17
12
S801
S803
502
33
S802
8
1
CN301
44
503
5
RV602
504
S601
J302
J303
RV301
S301
4
40
23
43
RV302
505
S302
30
11
36
J301
J304
3
36
43
36
43

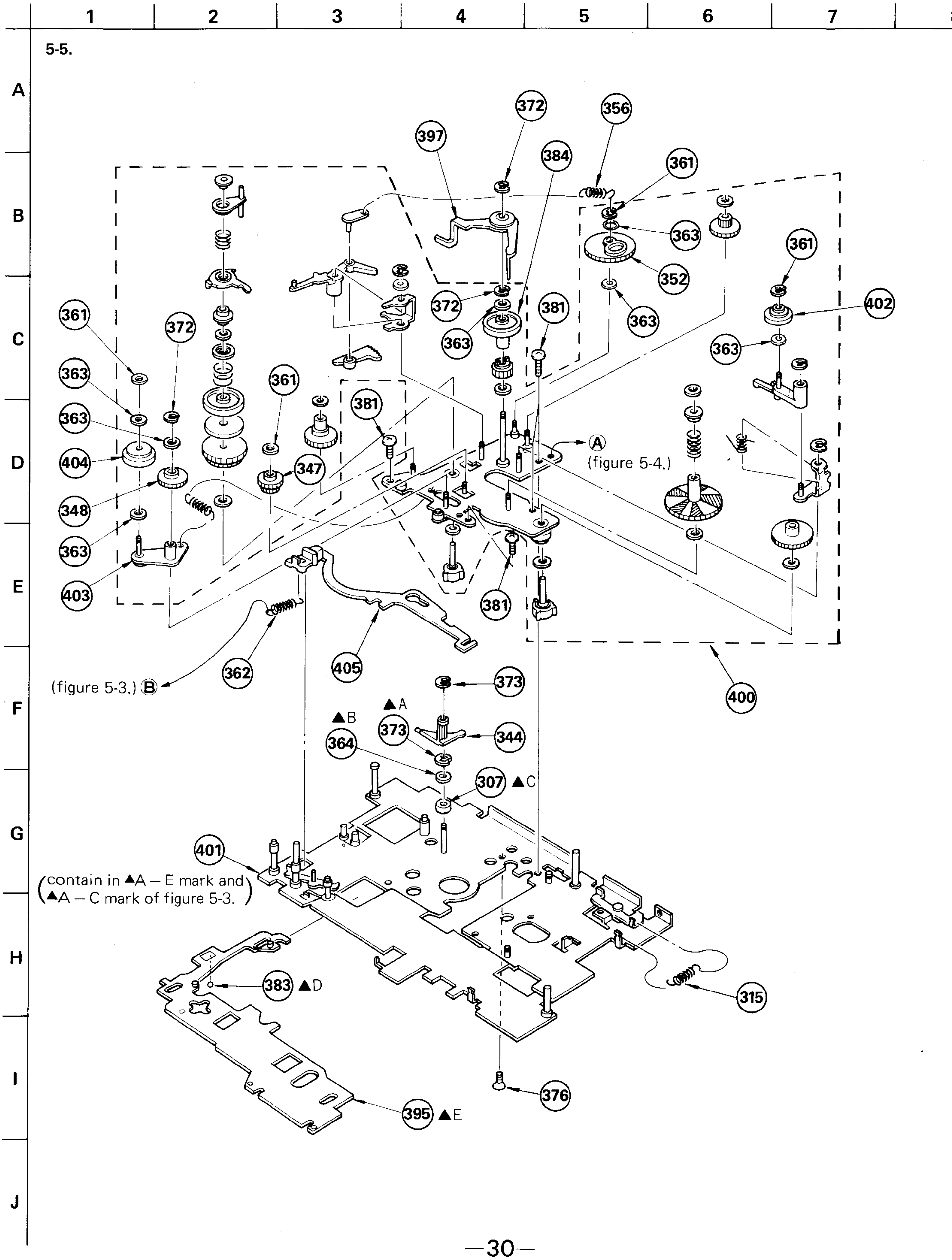
5-3.


A
B
C
D
E
F
G
H
I
J
HE901
HRP901
▲A
▲B
▲C 307
373 ▲A
▲B 364
Ⓑ (figure 5-5.)
S901

5-4.


A
B
C
D
E
F
G
H
I
J
FG901
A
(figure 5-5.)
S903
S902
PH701
M901

5-5.


A
B
C
D
E
F
G
H
I
J
A
(figure 5-4.)
(figure 5-3.) B
▲A
▲B
307 ▲C
(contain in ▲A – E mark and ▲A – C mark of figure 5-3.)
383 ▲D
395 ▲E

GENERAL SECTION

No.	Part No.	Description
1	3-305-801-00	SPRING
2	3-305-802-00	PLATE, NUT
3	3-305-804-00	SPRING
4	3-305-867-00	KNOB (A), CONTROL, REC
5	3-305-868-00	KNOB, SPEED CONTROL
6	3-305-871-11	KNOB, TAPE SELECTOR
7	3-305-872-00	KNOB, SWITCH, SPEED CONTROL
8	3-305-873-00	TERMINAL BOARD, BATTERY
9	3-305-874-00	SPRING
10 ♠;	3-305-875-00	CHASSIS, CLAW, LOCK
11	3-305-887-00	COVER, SWITCH
12 ♠;	3-305-888-00	RETAINER
13	3-305-889-00	SHAFT, BELT, CARRYING
14	3-305-891-00	KNOB, CONTROL, SLIDE
15	3-305-892-00	CLAW, LOCK
16	3-305-896-00	CASE, BATTERY
17	3-305-897-00	HOLDER, LED
18	3-305-947-00	LABEL, DOLBY
19	3-305-961-01	KNOB, DOLBY
20	3-305-962-01	LABEL, FRONT
21	3-305-963-01	(WM-D6C)...PANEL, UPPER
21	3-305-969-01	(TC-D6C)...PANEL, UPPER
22	3-305-966-01	KNOB, METER
23	3-305-967-01	PLATE, ORNAMENTAL
24 ♠;	3-308-430-00	RETAINER, REFLECTOR, PHOTO
25	9-910-840-XX	CUSHION, RELEASE (t=3)
26	3-527-126-00	MARK, BATTERY CASE
27	3-557-575-00	SPRING, COMPRESSION
28	3-570-615-00	POLY-WASHER (DIA.1.2)
29	3-570-903-00	LEG
30 ♠;	3-572-862-00	SPACER
31	3-574-744-00	PLATE (B), NUT
32	3-701-999-00	LABEL, SERIAL NUMBER
33	3-831-441-XX	SPACER (t=0.5)
34	3-831-441-XX	CUSHION (t=0.5)
35	3-884-171-00	STOPPER
36	7-623-203-11	SW 1.4,TYPE 1
37	7-624-106-04	STOP RING 3.0, TYPE -E
38	7-627-451-38	SCREW, PRECISION +K 1.4X2
39	7-627-551-08	SCREW, PRECISION +P 1.4X1.6
40	7-627-552-37	SCREW, PRECISION +P 1.7X3
41	7-627-850-08	SCREW, PRECISION +P 1.4X2
42	7-627-850-18	SCREW, PRECISION +P 1.4X2.5
43	7-627-850-27	SCREW, PRECISION +P 1.4X3
44	7-627-850-28	SCREW, PRECISION +P 1.4X3
45	7-627-850-58	SCREW, PRECISION +P 1.4X3.5

GENERAL SECTION

No.	Part No.	Description
46	9-911-837-XX	SPACER (t=1)
47	9-911-841-XX	CUSHION (B)(t=5)
48	9-911-845-XX	CUSHION (A)(t=5)
49	A-3043-068-A	PANEL SUB ASSY, REEL
50	X-3305-801-0	ARM ASSY
51	X-3305-818-0	LID ASSY, CASSETTE
52	X-3305-834-1	CABINET ASSY
53	X-3305-835-1	PANEL ASSY, LOWER
54	X-3564-820-0	HOLDER ASSY, BATTERY
55	3-703-707-01	STICKER, SONY SYMBOL (21)
56	3-305-968-01	(TC-D6C)...LABEL, MODEL NUMBER

ACCESSORY & PACKING MATERIAL

Part No.	Description
⚠1-463-138-00	(TC-D6C)...ADAPTOR, AC (AC-SW)
1-555-658-00	CORD, CONNECTION (RK-129)
3-305-935-00	(WM-D6C)...SPACER
3-305-972-00	(TC-D6C)...SPACER
3-305-973-00	(TC-D6C)...INDIVIDUAL CARTON
3-305-981-00	(WM-D6C)...INDIVIDUAL CARTON
3-305-975-00	(TC-D6C)...CUSHION
3-305-938-00	(WM-D6C)...CUSHION
3-305-980-00	(WM-D6C)...COVER, ACCESSORY
3-305-940-00	BAND, SHOULDER
3-305-970-00	CASE, CARRYING
3-570-631-71	BAG, POLYETHYLENE, FOR SET
3-701-618-00	BAG, POLYETHYLENE, FOR CONNECTION CORD
3-701-625-00	BAG, POLYETHYLENE, FOR INSTRUCTION MANUAL
3-773-736-11	(AEP)...MANUAL, INSTRUCTION
3-773-736-21	(US)....MANUAL, INSTRUCTION
3-773-736-31	(Canadian,AEP,UK,E)....MANUAL, INSTRUCTION
3-773-766-21	(TC-D6C)...............MANUAL, INSTRUCTION
3-795-748-21	(US)....SAFETY INSTRUCTIONS, HEADPHONE
8-810-036-90	(TC-D6C)...ECM-939LT SET
8-951-173-90	(WM-D6C)...MDR-40L SET

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MECHANISM SECTION

No.	Part No.	Description
301	1-548-516-41	TIMER, TAPE
302	♠;3-305-807-00	RING, MOTOR LEVER
303	3-305-808-00	SPRING
304	3-305-810-00	SCREW, THRUST ADJUSTMENT
305	3-305-812-00	LEVER (C), REC
306	♠;3-305-815-00	LEVER (A), MUTING
307	3-305-839-00	ROLLER (SMALL)
308	3-305-846-00	RETAINER, THRUST
309	3-305-856-00	SPRING
310	♠;3-305-857-00	RETAINER, FG LEAD WIRE
311	3-305-858-00	CLAMP, LEAD WIRE
312	3-305-863-00	HOLDER, LEAD WIRE
313	3-305-865-00	PLATE, LOCK
314	3-305-901-00	SPRING, TENSION
315	3-305-902-00	SPRING, TENSION
316	3-305-903-00	SPRING, TENSION
317	3-305-908-00	BUTTON, REC
318	3-305-910-00	BEARING (A), CAPSTAN
319	3-305-914-00	SPRING, TENSION
320	3-305-915-00	PLATE, LOCK, PAUSE
321	3-305-917-00	PLATE (B), RELEASE, PINCH
322	3-305-925-00	WASHER
323	3-305-926-00	POLY-WASHER, 1.7DIA
324	3-305-952-01	SCREW, SWITCH
325	3-305-953-01	SPRING
326	3-305-956-01	BUTTON, FWD
327	3-305-957-01	BUTTON, STOP
328	3-305-958-01	BUTTON, FF
329	3-305-959-01	BUTTON, REW
330	3-305-960-01	BUTTON, PAUSE
331	♠;3-309-729-00	SHEET, LEAF SWITCH
332	3-314-576-00	WASHER
333	3-480-136-00	BELT (B)
334	3-513-237-01	PLATE
335	3-527-189-00	SPRING, TENSION
336	3-527-190-00	SPRING, TENSION
337	♠;3-305-971-01	TERMINAL PLATE
338	3-547-666-00	SPRING, TENSION
339	3-547-667-00	SPRING, TENSION
340	3-547-669-00	SPRING, TENSION
341	♠;3-547-686-00	CLAMP (B), WIRE
342	3-554-103-00	BELT, DRIVING
343	♠;3-556-269-00	BRACKET (B), M
344	3-557-402-00	LEVER (C), RELEASE
345	3-557-405-00	LEVER, SPRING HOOK

MECHANISM SECTION

No.	Part No.	Description
346	3-557-408-00	SHAFT, LOCK PLATE
347	3-557-439-00	GEAR (A), F.R
348	3-557-440-00	GEAR (B), F.R
349	3-557-495-00	SPRING, TENSION
350	3-557-497-00	ARM, JOINT
351	3-557-498-00	SPRING, TENSION
352	3-557-509-00	GEAR (3)
353	3-557-514-00	LEVER, FWD
354	3-557-515-00	LEVER, FF
355	3-557-516-00	LEVER, REWIND
356	3-557-579-00	SPRING, TENSION
357	3-557-581-00	SPRING, TENSION
358	♠;3-557-805-00	CASE, SHIELD, M
359	♠;3-557-813-00	RUBBER, VIBRATION PROOF
360	3-558-708-21	WASHER, STOPPER
361	3-559-408-00	POLY-WASHER, 1.2 DIA
362	3-570-894-00	SPRING, TENSION
363	3-701-436-01	WASHER, 1.6 (t=0.13)
364	3-701-437-01	WASHER, 2 (t=0.13)
365	....	
366	3-703-502-22	SCREW
367	3-703-502-32	SCREW
368	3-831-441-XX	SPACER (t=0.5)
369	7-621-255-15	SCREW +P 2X3
370	7-621-255-25	SCREW +P 2X4
371	7-623-203-11	SW 1.4, TYPE 1
372	7-624-101-01	RING, RETAINING E-1.2
373	7-624-102-04	STOP RING 1.5, TYPE -E
374	7-624-104-04	STOP RING 2.0, TYPE -E
375	7-627-451-08	SCREW, PRECISION +K 1.4X1.6
376	7-627-451-27	SCREW, PRECISION +K 1.4X3
377	7-627-551-57	SCREW, PRECISION +P 1.4X3
378	7-627-551-78	SCREW, PRECISION +P 1.4X4
379	7-627-553-57	SCREW, PRECISION +P 2X4.5
380	7-627-850-07	SCREW, PRECISION +P 1.4X2
381	7-627-850-47	SCREW, PRECISION +P 1.4X1.6
382	7-627-851-27	SCREW, PRECISION +P 1.4X5
383	7-671-111-01	STEEL BALL 1MM
384	X-3305-804-0	PULLEY ASSY, MIDWAY
385	♠;X-3305-806-0	BRACKET ASSY, MOTOR SHAFT
386	X-3305-807-0	LEVER (A) ASSY, MOTOR
387	♠;X-3305-808-0	BRACKET ASSY, MOTOR
388	X-3305-809-0	LEVER (C) ASSY, MOTOR
389	X-3305-810-0	LEVER (B) ASSY, MOTOR
390	X-3305-811-0	CHASSIS ASSY, SO

NOTE:

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- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

MECHANISM SECTION

No.	Part No.	Description
391	X-3305-812-0	CHASSIS ASSY, PAUSE
392	X-3305-813-0	LEVER (B) ASSY, REC
393	X-3305-814-0	LEVER (A) ASSY, REC
394	X-3305-821-0	LEVER ASSY, PAUSE
395	♠;X-3305-823-0	CHASSIS ASSY, HEAD
396	X-3305-824-0	FLYWHEEL BLOCK ASSY
397	♠;X-3305-826-0	LEVER ASSY, PREVENTION, SO
398	X-3305-827-0	PINCH LEVER ASSY
399	X-3305-828-0	TABLE ASSY, EJECT LEVER
400	X-3305-832-1	TABLE COMPLETE ASSY, BEARING
401	♠;X-3305-833-1	CHASSIS ASSY, MECHANICAL
402	X-3557-407-0	IDLER ASSY, FWD
403	♠;X-3557-408-0	LEVER (B) ASSY, F.R
404	X-3557-409-0	PULLEY ASSY, F.R
405	X-3557-411-0	LEVER (A) ASSY, F.R
406	X-3557-433-0	BRACKET ASSY, COUNTER
407	X-3568-702-0	LEVER ASSY, STOP

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	♠;1-611-493-11	PC BOARD, DC-DC			
502	♠;1-611-495-11	PC BOARD, LED			
503	♠;1-611-909-11	PC BOARD, SPECTRAL SKEWING (R)			
504	♠;1-611-910-11	PC BOARD, SPECTRAL SKEWING (L)			
505	♠;A-3068-070-A	MOUNTED PCB, MAIN			
506	♠;A-3068-074-A	MOUNTED PCB, AUTO-OFF			
C101	1-124-499-00	ELECT	1MF	20%	50V
C102	1-102-074-00	CERAMIC	0.001MF	10%	50V
C103	1-131-386-00	TANTALUM	33MF	20%	6.3V
C104	1-131-408-00	TANTALUM	1MF	20%	35V
C105	1-131-408-00	TANTALUM	1MF	20%	35V
C106	1-102-074-00	CERAMIC	0.001MF	10%	50V
C107	1-123-615-00	ELECT	4.7MF	20%	35V
C108	1-161-011-00	CERAMIC	0.0068MF	10%	25V
C109	1-102-116-00	CERAMIC	680PF	10%	50V
C110	1-131-375-00	TANTALUM	4.7MF	20%	10V
C111	1-102-074-00	CERAMIC	0.001MF	10%	50V
C112	1-131-375-00	TANTALUM	4.7MF	20%	10V
C113	1-102-115-00	CERAMIC	560PF	10%	50V
C114	1-130-487-00	MYLAR	0.022MF	5%	50V
C115	1-131-408-00	TANTALUM	1MF	20%	35V
C116	1-130-479-00	MYLAR	0.0047MF	5%	50V
C117	1-102-106-00	CERAMIC	100PF	10%	50V
C118	1-130-483-00	MYLAR	0.01MF	5%	50V
C119	1-130-483-00	MYLAR	0.01MF	5%	50V
C120	1-131-389-00	TANTALUM	10MF	20%	3.15V
C121	1-161-017-00	CERAMIC	0.022MF	10%	25V
C122	1-124-257-00	ELECT	2.2MF	20%	50V
C123	1-131-342-00	TANTALUM	0.15MF	10%	35V
C124	1-131-400-00	TANTALUM	0.047MF	20%	35V
C125	1-131-400-00	TANTALUM	0.047MF	20%	35V
C126	1-131-400-00	TANTALUM	0.047MF	20%	35V
C127	1-131-342-00	TANTALUM	0.15MF	10%	35V
C128	1-131-342-00	TANTALUM	0.15MF	10%	35V
C129	1-161-009-00	CERAMIC	0.0047MF	10%	25V
C130	1-124-252-00	ELECT	0.33MF	20%	50V
C131	1-131-408-00	TANTALUM	1MF	20%	35V
C132	1-131-408-00	TANTALUM	1MF	20%	35V
C133	1-130-483-00	MYLAR	0.01MF	5%	50V
C134	1-102-115-00	CERAMIC	560PF	10%	50V
C135	1-131-408-00	TANTALUM	1MF	20%	35V
C136	1-131-408-00	TANTALUM	1MF	20%	35V
C137	1-124-224-00	ELECT	47MF	20%	6.3V
C138	1-123-661-00	ELECT	100MF	20%	6.3V
C139	1-124-257-00	ELECT	2.2MF	20%	50V
C141	1-102-116-00	CERAMIC	680PF	10%	50V
C142	1-131-341-00	TANTALUM	0.1MF	20%	35V
C143	1-131-361-00	TANTALUM	2.2MF	20%	20V
C144	1-131-375-00	TANTALUM	4.7MF	20%	10V
C145	1-130-483-00	MYLAR	0.01MF	5%	50V
C146	1-130-485-00	MYLAR	0.015MF	5%	50V
C147	1-130-484-00	MYLAR	0.012MF	5%	50V
C148	1-130-485-00	MYLAR	0.015MF	5%	50V
C149	1-107-042-00	MICA	2.2PF		500V
C150	1-107-323-00	MICA CAPACITOR UNIT			
C151	1-163-988-00	CERAMIC CHIP	180PF	5%	100V
C152	1-102-074-00	CERAMIC	0.001MF	10%	50V
C153	1-102-115-00	CERAMIC	560PF	10%	50V
C154	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C155	1-102-115-00	CERAMIC	560PF	10%	50V
C156	1-107-208-00	MICA	18PF	5%	500V
C301	1-124-228-00	ELECT	22MF	20%	10V
C302	1-131-371-00	TANTALUM	10MF	20%	16V
C303	1-123-617-00	ELECT	10MF	20%	16V
C304	1-124-228-00	ELECT	22MF	20%	10V
C305	1-131-391-00	TANTALUM	22MF	20%	3.15V
C306	1-124-224-00	ELECT	47MF	20%	6.3V
C307	1-123-618-00	ELECT	22MF	20%	6.3V
C308	1-131-375-00	TANTALUM	4.7MF	20%	10V

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C309	1-124-224-00	ELECT	47MF	20%	6.3V
C310	1-123-612-00	ELECT	2.2MF	20%	50V
C311	1-130-896-00	FILM	0.0082MF	5%	400V
C312	1-131-361-00	TANTALUM	2.2MF	20%	20V
C313	1-130-479-00	MYLAR	0.0047MF	5%	50V
C314	1-161-005-00	CERAMIC	0.0022MF	10%	25V
C315	1-123-320-00	ELECT	100MF	20%	16V
C316	1-123-320-00	ELECT	100MF	20%	16V
C317	1-123-308-00	ELECT	220MF	20%	10V
C318	1-123-827-00	ELECT	220MF	20%	4V
C319	1-102-074-00	CERAMIC	0.001MF	10%	50V
C320	1-124-224-00	ELECT	47MF	20%	6.3V
C321	1-102-074-00	CERAMIC	0.001MF	10%	50V
C322	1-102-074-00	CERAMIC	0.001MF	10%	50V
C601	1-123-607-00	ELECT	0.1MF	20%	50V
C602	1-123-610-00	ELECT	0.47MF	20%	50V
C603	1-123-607-00	ELECT	0.1MF	20%	50V
C604	1-102-120-00	CERAMIC	0.0018MF	10%	50V
C605	1-130-865-00	FILM	0.0033MF	5%	50V
C606	1-131-389-00	TANTALUM	10MF	20%	3.15V
C607	1-123-822-00	ELECT	47MF	20%	10V
C608	1-131-361-00	TANTALUM	2.2MF	20%	20V
C609	1-161-013-00	CERAMIC	0.01MF	10%	25V
C610	1-130-482-00	MYLAR	0.0082MF	5%	50V
C611	1-130-483-00	MYLAR	0.01MF	5%	50V
C612	1-130-483-00	MYLAR	0.01MF	5%	50V
C613	1-130-485-00	MYLAR	0.015MF	5%	50V
C701	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C702	1-123-618-00	ELECT	22MF	20%	6.3V
C703	1-163-161-00	CERAMIC CHIP	15PF	5%	50V
C704	1-163-161-00	CERAMIC CHIP	15PF	5%	50V
C705	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C706	1-123-617-00	ELECT	10MF	20%	16V
C801	1-124-255-00	ELECT	1MF	20%	50V
C802	1-124-238-00	ELECT	4.7MF	20%	25V
C803	1-123-618-00	ELECT	22MF	20%	6.3V
C804	1-131-418-00	TANTALUM	1MF	20%	10V
CN301	1-507-749-00	JACK, EXTENTION POWER (DC IN 6V)			
CP101	1-235-317-11	FILTER, LOW PASS			
CP102	1-235-318-11	FILTER, SP-SK			
CP201	1-235-317-11	FILTER, LOW PASS			
CP202	1-235-318-11	FILTER, SP-SK			
CP301	1-464-177-00	CIRCUIT UNIT, MUTING			
CP302	1-464-176-00	CIRCUIT UNIT, SWITCHING			
CP303	1-464-176-00	CIRCUIT UNIT, SWITCHING			
CP304	1-464-183-21	CONVERTER UNIT, DC-DC			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D101	8-719-815-55	DIODE 1S1555
D201	8-719-815-55	DIODE 1S1555
D301	8-719-942-31	DIODE HZ3ALL
D302	8-719-815-55	DIODE 1S1555
D303	8-719-815-55	DIODE 1S1555
D701	8-719-100-05	DIODE 1S2837
D801	8-719-909-10	DIODE GL9PR10
D802	8-719-909-10	DIODE GL9PR10
D803	8-719-909-10	DIODE GL9PR10
D804	8-719-909-10	DIODE GL9PR10
D805	8-719-909-10	DIODE GL9PR10
FG901	A-3164-245-A	COIL SUB ASSY, FG
HE901	8-825-724-00	HEAD, ERASE EF-201-36
HRP901	8-825-529-60	HEAD, REC/PB (PA259-3602A)
IC101	8-752-006-80	IC CX20068
IC102	8-759-700-50	IC NJM386M
IC201	8-752-006-80	IC CX20068
IC202	8-759-700-50	IC NJM386M
IC301	8-759-700-43	IC NJM4558M
IC302	8-759-700-43	IC NJM4558M
IC601	8-759-909-45	IC CX20084
IC701	8-759-958-14	IC MSM58141RS
IC801	8-759-909-40	IC CX10043
J301	1-507-794-31	JACK, SMALL TYPE (WITH SWITCH)(MIC)
J302	1-507-929-21	JACK (LINE IN)
J303	1-507-929-21	JACK (LINE OUT)
J304	1-507-929-11	JACK (HEAD PHONES)
L101	1-408-682-00	MICRO INDUCTOR 10MMH
L102	1-408-704-00	MICRO INDUCTOR 33MMH
L201	1-408-682-00	MICRO INDUCTOR 10MMH
L202	1-408-704-00	MICRO INDUCTOR 33MMH
L301	1-408-557-00	MICRO INDUCTOR 3.3UH
M901	X-3305-830-1	MOTOR ASSY (MNF-1601A)
PH701	8-719-751-42	DIODE NJL5141E
Q101	8-729-204-83	TRANSISTOR 2SA1048-GR
Q102	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q103	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q104	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q105	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q106	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q107	8-729-100-66	TRANSISTOR 2SC1623
Q108	8-729-102-03	TRANSISTOR 2SD1020
Q109	8-729-100-66	TRANSISTOR 2SC1623

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q201	8-729-204-83	TRANSISTOR 2SA1048-GR			
Q202	8-729-205-84	TRANSISTOR 2SC2458L-BL			
Q203	8-729-205-84	TRANSISTOR 2SC2458L-BL			
Q204	8-729-205-84	TRANSISTOR 2SC2458L-BL			
Q205	8-729-205-84	TRANSISTOR 2SC2458L-BL			
Q206	8-729-205-84	TRANSISTOR 2SC2458L-BL			
Q207	8-729-100-66	TRANSISTOR 2SC1623			
Q208	8-729-102-03	TRANSISTOR 2SD1020			
Q209	8-729-100-66	TRANSISTOR 2SC1623			
Q301	8-729-245-83	TRANSISTOR 2SC2458			
Q302	8-729-245-83	TRANSISTOR 2SC2458			
Q303	8-729-800-83	TRANSISTOR 2SB808			
Q304	8-729-245-83	TRANSISTOR 2SC2458			
Q305	8-729-102-03	TRANSISTOR 2SD1020			
Q306	8-729-102-03	TRANSISTOR 2SD1020			
Q307	8-729-100-13	TRANSISTOR 2SC2001			
Q308	8-729-800-83	TRANSISTOR 2SB808			
Q309	8-729-245-83	TRANSISTOR 2SC2458			
Q601	8-729-801-83	TRANSISTOR 2SB1013			
Q701	8-729-100-66	TRANSISTOR 2SC1623			
Q702	8-729-100-66	TRANSISTOR 2SC1623			
Q703	8-729-100-66	TRANSISTOR 2SC1623			
Q704	8-729-100-66	TRANSISTOR 2SC1623			
Q801	8-729-245-83	TRANSISTOR 2SC2458			
R101	1-247-879-00	CARBON	100K	5%	1/6W
R102	1-247-865-00	CARBON	27K	5%	1/6W
R103	1-247-855-00	CARBON	10K	5%	1/6W
R104	1-247-811-00	CARBON	150	5%	1/6W
R105	1-247-867-00	CARBON	33K	5%	1/6W
R106	1-247-835-00	CARBON	1.5K	5%	1/6W
R107	1-247-845-00	CARBON	3.9K	5%	1/6W
R108	1-247-863-00	CARBON	22K	5%	1/6W
R109	1-247-895-00	CARBON	470K	5%	1/6W
R110	1-247-903-00	CARBON	1M	5%	1/6W
R111	1-247-849-00	CARBON	5.6K	5%	1/6W
R112	1-247-829-00	CARBON	820	5%	1/6W
R113	1-247-877-00	CARBON	82K	5%	1/6W
R114	1-247-877-00	CARBON	82K	5%	1/6W
R115	1-247-809-00	CARBON	120	5%	1/6W
R116	1-247-849-00	CARBON	5.6K	5%	1/6W
R117	1-247-879-00	CARBON	100K	5%	1/6W
R118	1-247-819-00	CARBON	330	5%	1/6W
R119	1-247-857-00	CARBON	12K	5%	1/6W
R120	1-247-835-00	CARBON	1.5K	5%	1/6W
R121	1-247-881-00	CARBON	120K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R122	1-247-851-00	CARBON	6.8K	5%	1/6W
R123	1-247-853-00	CARBON	8.2K	5%	1/6W
R124	1-247-857-00	CARBON	12K	5%	1/6W
R125	1-247-861-00	CARBON	18K	5%	1/6W
R126	1-247-895-00	CARBON	470K	5%	1/6W
R127	1-247-843-00	CARBON	3.3K	5%	1/6W
R128	1-247-850-00	CARBON	6.2K	5%	1/6W
R129	1-247-848-00	CARBON	5.1K	5%	1/6W
R130	1-247-874-00	CARBON	62K	5%	1/6W
R131	1-247-838-00	CARBON	2K	5%	1/6W
R132	1-247-867-00	CARBON	33K	5%	1/6W
R133	1-247-838-00	CARBON	2K	5%	1/6W
R134	1-247-861-00	CARBON	18K	5%	1/6W
R135	1-247-888-00	CARBON	240K	5%	1/6W
R136	1-247-888-00	CARBON	240K	5%	1/6W
R137	1-247-837-00	CARBON	1.8K	5%	1/6W
R138	1-247-862-00	CARBON	20K	5%	1/6W
R139	1-247-859-00	CARBON	15K	5%	1/6W
R140	1-247-867-00	CARBON	33K	5%	1/6W
R141	1-247-825-00	CARBON	560	5%	1/6W
R142	1-247-838-00	CARBON	2K	5%	1/6W
R143	1-247-835-00	CARBON	1.5K	5%	1/6W
R144	1-247-871-00	CARBON	47K	5%	1/6W
R145	1-247-873-00	CARBON	56K	5%	1/6W
R146	1-247-855-00	CARBON	10K	5%	1/6W
R147	1-247-839-00	CARBON	2.2K	5%	1/6W
R148	1-247-839-00	CARBON	2.2K	5%	1/6W
R149	1-247-865-00	CARBON	27K	5%	1/6W
R150	1-247-863-00	CARBON	22K	5%	1/6W
R151	1-247-821-00	CARBON	390	5%	1/6W
R152	1-247-787-00	CARBON	15	5%	1/6W
R153	1-247-847-00	CARBON	4.7K	5%	1/6W
R155	1-247-867-00	CARBON	33K	5%	1/6W
R156	1-247-873-00	CARBON	56K	5%	1/6W
R157	1-247-879-00	CARBON	100K	5%	1/6W
R158	1-247-845-00	CARBON	3.9K	5%	1/6W
R159	1-247-851-00	CARBON	6.8K	5%	1/6W
R160	1-247-855-00	CARBON	10K	5%	1/6W
R161	1-247-816-00	CARBON	240	5%	1/6W
R162	1-247-811-00	CARBON	150	5%	1/6W
R163	1-247-817-00	CARBON	270	5%	1/6W
R164	1-247-859-00	CARBON	15K	5%	1/6W
R165	1-247-851-00	CARBON	6.8K	5%	1/6W
R166	1-247-867-00	CARBON	33K	5%	1/6W
R167	1-247-879-00	CARBON	100K	5%	1/6W

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- MMH : mH, UH : μH

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In each case, U : μ, for example:
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UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R168	1-247-877-00	CARBON	82K	5%	1/6W
R169	1-247-852-00	CARBON	7.5K	5%	1/6W
R301	1-247-857-00	CARBON	12K	5%	1/6W
R302	1-247-855-00	CARBON	10K	5%	1/6W
R303	1-247-857-00	CARBON	12K	5%	1/6W
R305	1-247-865-00	CARBON	27K	5%	1/6W
R306	1-247-863-00	CARBON	22K	5%	1/6W
R307	1-247-879-00	CARBON	100K	5%	1/6W
R308	1-247-847-00	CARBON	4.7K	5%	1/6W
R309	1-247-879-00	CARBON	100K	5%	1/6W
R310	1-247-863-00	CARBON	22K	5%	1/6W
R311	1-247-865-00	CARBON	27K	5%	1/6W
R312	1-247-823-00	CARBON	470	5%	1/6W
R313	1-247-821-00	CARBON	390	5%	1/6W
R314	1-247-847-00	CARBON	4.7K	5%	1/6W
R315	1-247-847-00	CARBON	4.7K	5%	1/6W
R316	1-247-795-00	CARBON	33	5%	1/6W
R317	1-247-871-00	CARBON	47K	5%	1/6W
R318	1-247-867-00	CARBON	33K	5%	1/6W
R319	1-247-867-00	CARBON	33K	5%	1/6W
R320	1-247-881-00	CARBON	120K	5%	1/6W
R321	1-247-831-00	CARBON	1K	5%	1/6W
R322	1-247-855-00	CARBON	10K	5%	1/6W
R601	1-247-840-00	CARBON	2.4K	5%	1/6W
R602	1-247-873-00	CARBON	56K	5%	1/6W
R603	1-214-781-00	METAL	150K	1%	1/4W
R604	1-214-781-00	METAL	150K	1%	1/4W
R605	1-247-855-00	CARBON	10K	5%	1/6W
R607	1-247-879-00	CARBON	100K	5%	1/6W
R608	1-247-855-00	CARBON	10K	5%	1/6W
R609	1-247-887-00	CARBON	220K	5%	1/6W
R610	1-247-876-00	CARBON	75K	5%	1/6W
R701	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R702	1-216-258-00	METAL CHIP	330K	5%	1/8W
R703	1-216-246-00	METAL CHIP	100K	5%	1/8W
R704	1-216-252-00	METAL CHIP	180K	5%	1/8W
R705	1-216-252-00	METAL CHIP	180K	5%	1/8W
R706	1-216-238-00	METAL CHIP	47K	5%	1/8W
R707	1-216-222-00	METAL CHIP	10K	5%	1/8W
R708	1-216-230-00	METAL CHIP	22K	5%	1/8W
R709	1-216-222-00	METAL CHIP	10K	5%	1/8W
R710	1-216-250-00	METAL CHIP	150K	5%	1/8W
R711	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R712	1-216-246-00	METAL CHIP	100K	5%	1/8W
R713	1-216-270-00	METAL CHIP	1M	5%	1/8W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R714	1-216-230-00	METAL CHIP	22K	5%	1/8W
R715	1-216-278-00	METAL CHIP	2.2M	5%	1/8W
R716	1-216-180-00	METAL CHIP	180	5%	1/8W
R801	1-247-855-00	CARBON	10K	5%	1/6W
R802	1-247-855-00	CARBON	10K	5%	1/6W
R804	1-247-879-00	CARBON	100K	5%	1/6W
R805	1-247-855-00	CARBON	10K	5%	1/6W
R806	1-247-879-00	CARBON	100K	5%	1/6W
R807	1-247-855-00	CARBON	10K	5%	1/6W
R808	1-247-857-00	CARBON	12K	5%	1/6W
R809	1-247-873-00	CARBON	56K	5%	1/6W
R810	1-247-875-00	CARBON	68K	5%	1/6W
R811	1-247-847-00	CARBON	4.7K	5%	1/6W
R812	1-247-853-00	CARBON	8.2K	5%	1/6W
R813	1-247-783-00	CARBON	10	5%	1/6W
R814	1-247-813-00	CARBON	180	5%	1/6W
R815	1-247-813-00	CARBON	180	5%	1/6W
R816	1-247-813-00	CARBON	180	5%	1/6W
R817	1-247-813-00	CARBON	180	5%	1/6W
R818	1-247-813-00	CARBON	180	5%	1/6W
R819	1-247-831-00	CARBON	1K	5%	1/6W
RV101	1-226-710-00	RES, ADJ, SOLID 10K			
RV102	1-230-035-00	RES, ADJ, CARBON 10K			
RV201	1-226-710-00	RES, ADJ, SOLID 10K			
RV202	1-230-035-00	RES, ADJ, CARBON 10K			
RV301	1-230-275-11	RES, VAR, CARBON 50K/50K			
RV302	1-228-545-00	RES, VAR, SLIDE 50K/50K			
RV601	1-230-351-11	RES, ADJ, METAL GLAZE 50K			
RV602	1-228-607-00	RES, VAR, CARBON 20K			
RV603	1-230-351-11	RES, ADJ, METAL GLAZE 50K			
S301	1-554-029-00	SWITCH, SLIDE (REC/PB SELECT)			
S302	1-554-222-00	SWITCH, SLIDE (MIC ATT)			
S601	1-554-142-00	SWITCH, SLIDE (SPEED TUNE)			
S801	1-554-746-11	SWITCH, SLIDE (PEAK/BATT SELECT)			
S802	1-552-642-00	SWITCH (DOLBY NR)			
S803	1-552-642-00	SWITCH (TAPE SELECT)			
S901	1-553-226-00	SWITCH, LEAF (POWER)			
S902	1-552-181-00	SWITCH, LEAF (FWD MUTE)			
S903	1-553-198-00	SWITCH, LEAF (REC MUTE)			
T301	1-433-244-00	TRANSFORMER, BIAS OSCILLATOR			
X701	1-527-957-00	OSCILLATOR, CRYSTAL			

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
  MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

WM-D6C/TC-D6C

SERVICE MANUAL

WM-D6C:
US Model
Canadian Model
AEP Model
UK Model
E Model
TC-D6C:
US Model

No. 1
January, 1985

SUPPLEMENT

File this Supplement with the Service Manual.

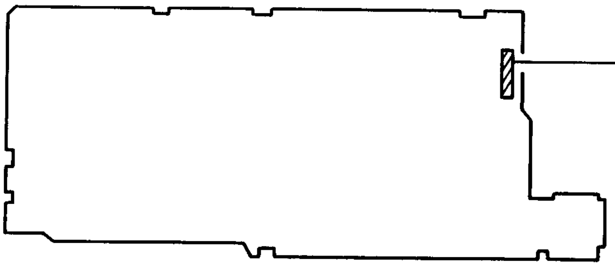
Subject: DOLBY IC (IC101, 201) CHANGE

	(Former)		**(New)**
IC101, 102	CX20068	➡	CX20218

Because of this change, main board and the circuit around DOLBY IC have been changed.

- New or former type can be identified by the part-number suffix of main board.

MAIN BOARD



Former type: 1-611-494-11
New type: 1-611-494-12

The mounting diagram and the schematic diagram for the main board whose part-number suffix is 12 are given in this suppliment.

As to information for the main board whose part-number suffix is 11, refer to the service manual previously issued.

- CHANGED PARTS .... Page 2–3
- Semiconductor lead layouts .... Page 3
- MOUNTING DIAGRAM .... Page 4–6
- SCHEMATIC DIAGRAM .... Page 7–10

STEREO CASSETTE-CORDER

SONY®

TC

- **CHANGED PARTS**

Note: Components for right channel is omitted. (Reference numbers are corded from 201.)

Ref. No.	Former (PC Board Suffix-11)	New (PC Board Suffix-12)	
	Description	Part No.	Description
C103	TANTALUM 33μF 20% 6.3V	1-124-220-00	ELECT 33μF 20% 4V
C117	CERAMIC 100PF 10% 50V	1-102-108-00	CERAMIC 150PF 10% 50V
C121	CERAMIC 0.022μF 10% 25V	1-161-054-00	CERAMIC 0.018μF 10% 25V
C122	ELECT 2.2μF 20% 50V	1-124-255-00	ELECT 1μF 20% 50V
C123	TANTALUM 0.15μF 10% 35V	1-131-343-00	TANTALUM 0.22μF 10% 35V
C127	TANTALUM 0.15μF 10% 35V	1-131-341-00	TANTALUM 0.1μF 10% 35V
C128	TANTALUM 0.15μF 10% 35V	1-131-343-00	TANTALUM 0.22μF 10% 35V
C129	CERAMIC 0.0047μF 10% 25V	1-161-012-00	CERAMIC 0.0082μF 10% 25V
C134	CERAMIC 560PF 10% 50V	1-102-119-00	CERAMIC 0.0015μF 10% 50V
D101	DIODE 1S1555	—	—
D201	DIODE 1S1555	—	—
D301	DIODE HZ3ALL	—	—
IC101	IC CX20068	8-752-021-80	IC CX20218
IC201	IC CX20068	8-752-021-80	IC CX20218
R134	CARBON 18KΩ 5% 1/6W	1-247-869-00	CARBON 39KΩ 5% 1/6W
R135	CARBON 240KΩ 5% 1/6W	1-247-872-00	CARBON 51KΩ 5% 1/6W
R136	CARBON 240KΩ 5% 1/6W	1-247-891-00	CARBON 330KΩ 5% 1/6W
R137	CARBON 1.8KΩ 5% 1/6W	1-247-831-00	CARBON 1KΩ 5% 1/6W
R138	CARBON 20KΩ 5% 1/6W	1-247-858-00	CARBON 13KΩ 5% 1/6W
R139	CARBON 15KΩ 5% 1/6W	1-247-858-00	CARBON 13KΩ 5% 1/6W
R141	CARBON 560Ω 5% 1/6W	1-247-827-00	CARBON 680Ω 5% 1/6W
R149	CARBON 27KΩ 5% 1/6W	1-247-859-00	CARBON 15KΩ 5% 1/6W
R150	CARBON 22KΩ 5% 1/6W	1-247-871-00	CARBON 47KΩ 5% 1/6W

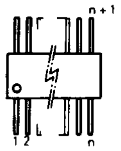
Ref. No.	Former (PC Board Suffix-11)	New (PC Board Suffix-12)	
	Description	Part No.	Description
R154	————————	1-247-890-00	CARBON 300KΩ 5% 1/6W
R161	CARBON 240Ω 5% 1/6W	1-247-818-00	CARBON 300Ω 5% 1/6W
R170	————————	1-247-903-00	CARBON 1MΩ 5% 1/6W
R171	————————	1-216-198-00	METAL CHIP 1KΩ 5% 1/8W
R172	————————	1-216-081-00	METAL CHIP 22KΩ 5% 1/10W
R312	CARBON 470Ω 5% 1/6W	1-247-826-00	CARBON 620Ω 5% 1/6W
R313	CARBON 390Ω 5% 1/6W	1-247-824-00	CARBON 510Ω 5% 1/6W

Service Manual P31, 32

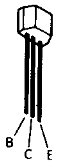
(345) LEVER, SPRING HOOK 3-557-405-00 ➡ 3-305-988-01

- **Semiconductor lead layouts**

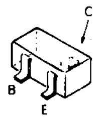
CX10043
CX20218
CX20084
NJM386M
NJM4558M



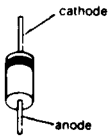
2SA1048-GR
2SB808
2SC2458
2SC2458L-BL



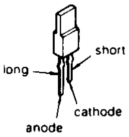
2SC1623



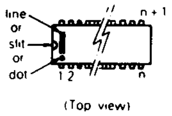
1S1555


cathode
anode

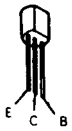
GL9PR10


short
long
cathode
anode

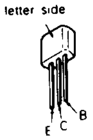
MSM58141RS


line
or
slit
or
dot
n+1
1 2
n
(Top view)

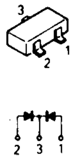
2SB1013
2SC2001



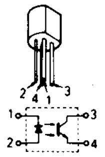
2SD1020


letter side
E
C
B

1S2837

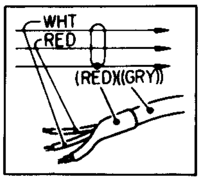


NJL5141E



Note: FOR MOUNTING DIAGRAM

- Color code of sleeving over the end of the jacket.

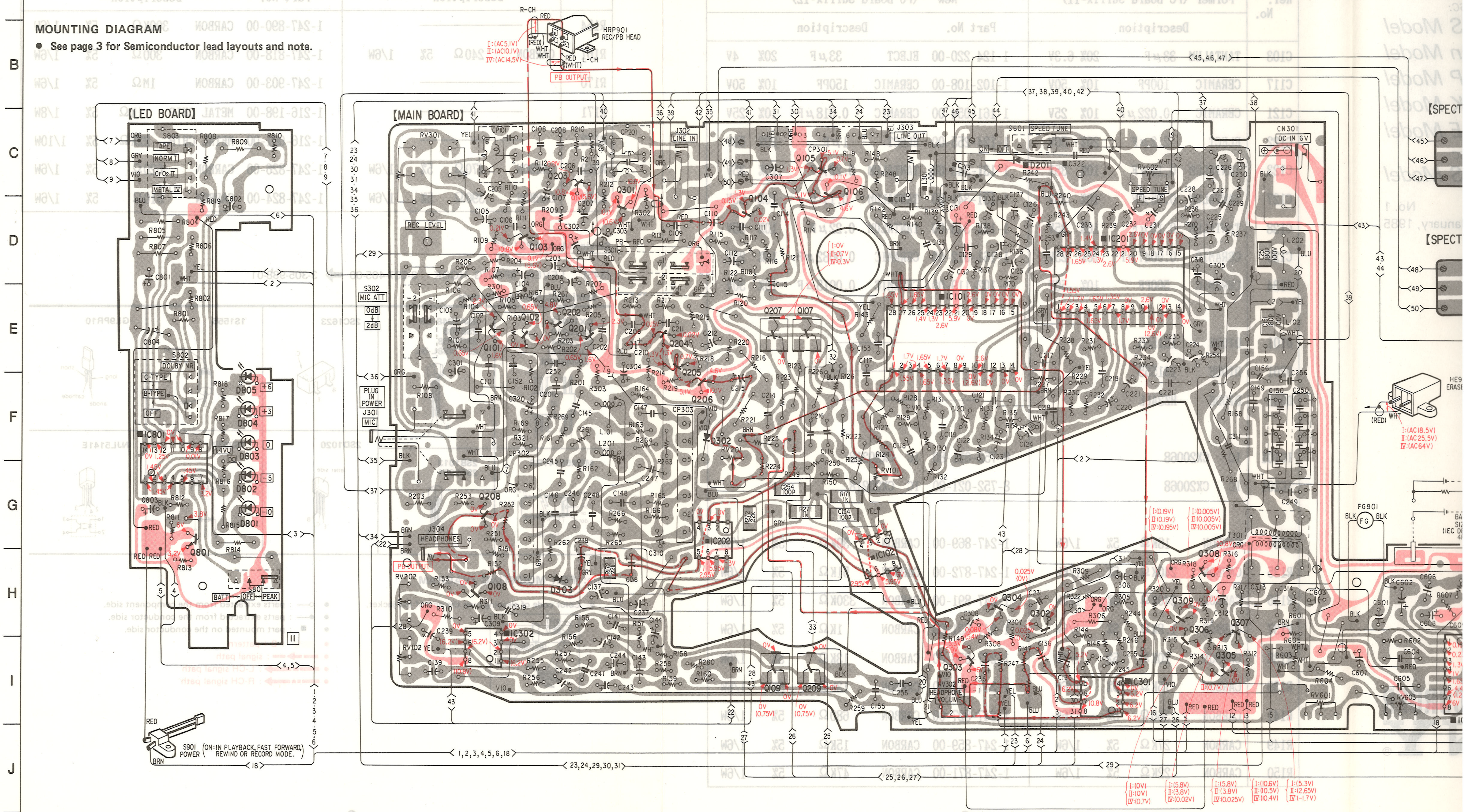

WHT
RED
(RED)(GRY)

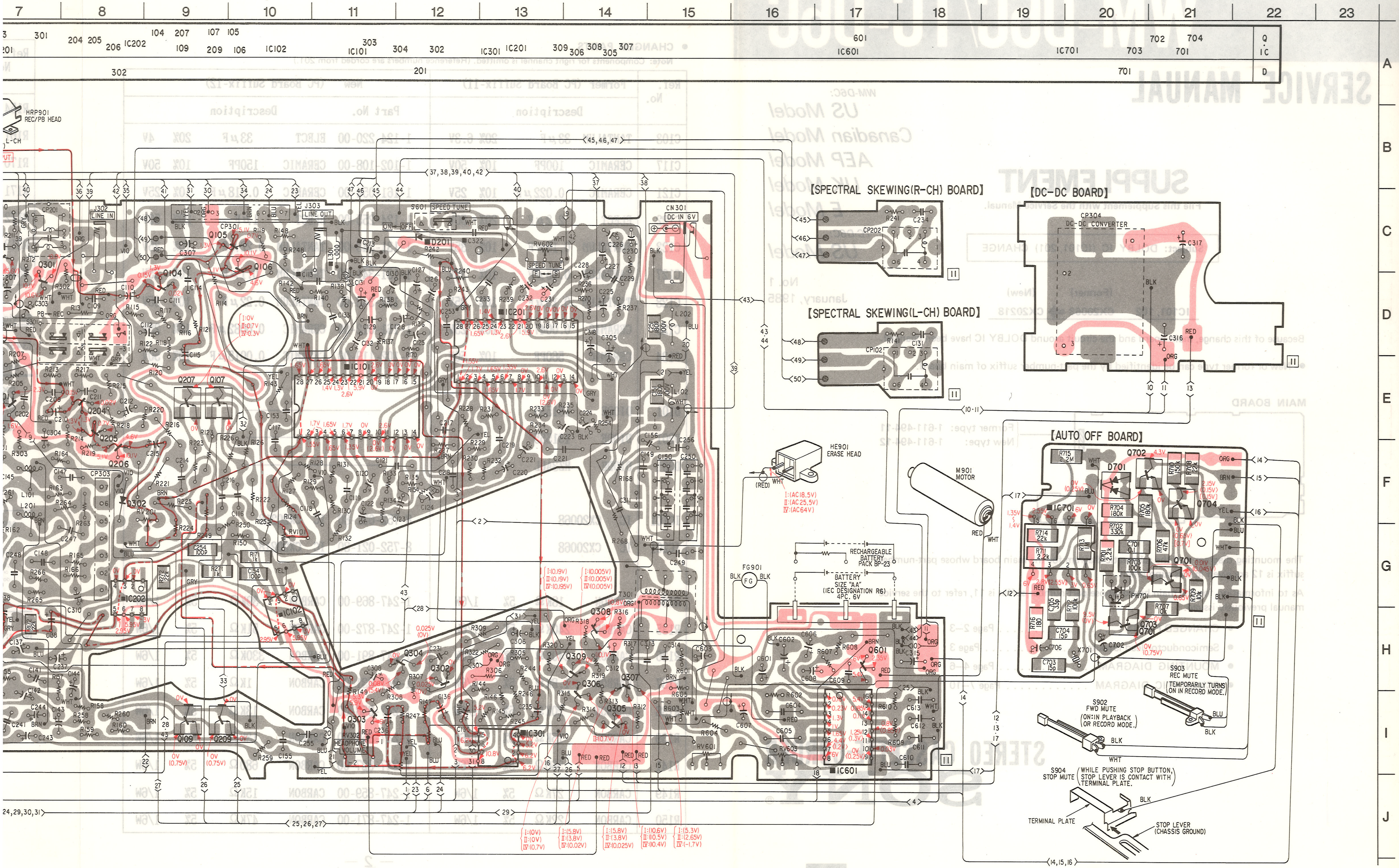
- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ▨ : B + pattern
- ▬▬➡▬ : signal path
- ▬▬▪▬➡ : L-CH signal path
- ▬▬▪▪▬➡ : R-CH signal path

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Q IC		IC801 801				108 208 101 IC302 103 102	202 203 201 301	204 205 206 IC202	104 207 109 107 209	105 106 IC102	303 IC101	304 302	IC301 IC201 309	306 308 305 307		IC
D			805 804	803 802 801			303	302				201				

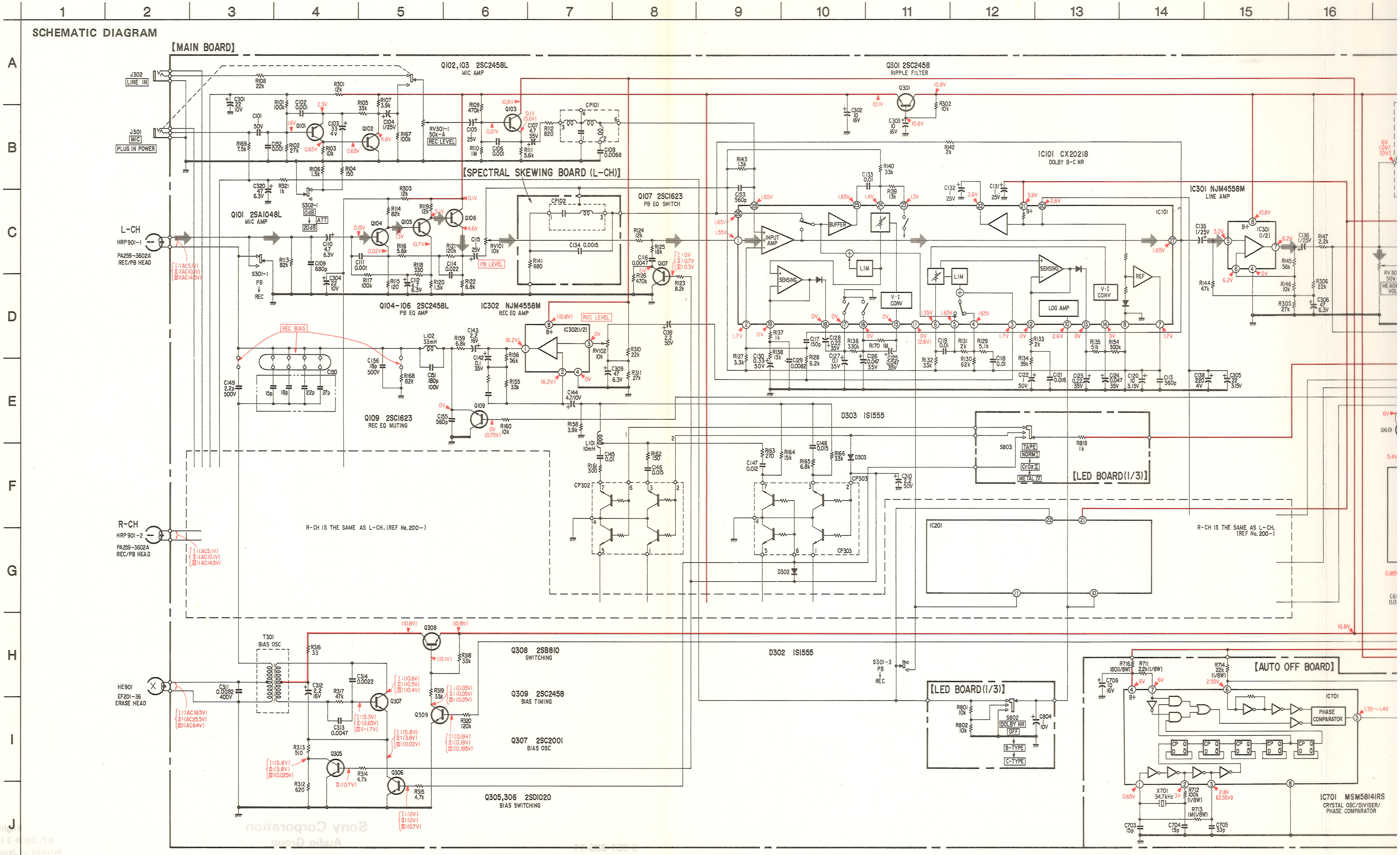
MOUNTING DIAGRAM

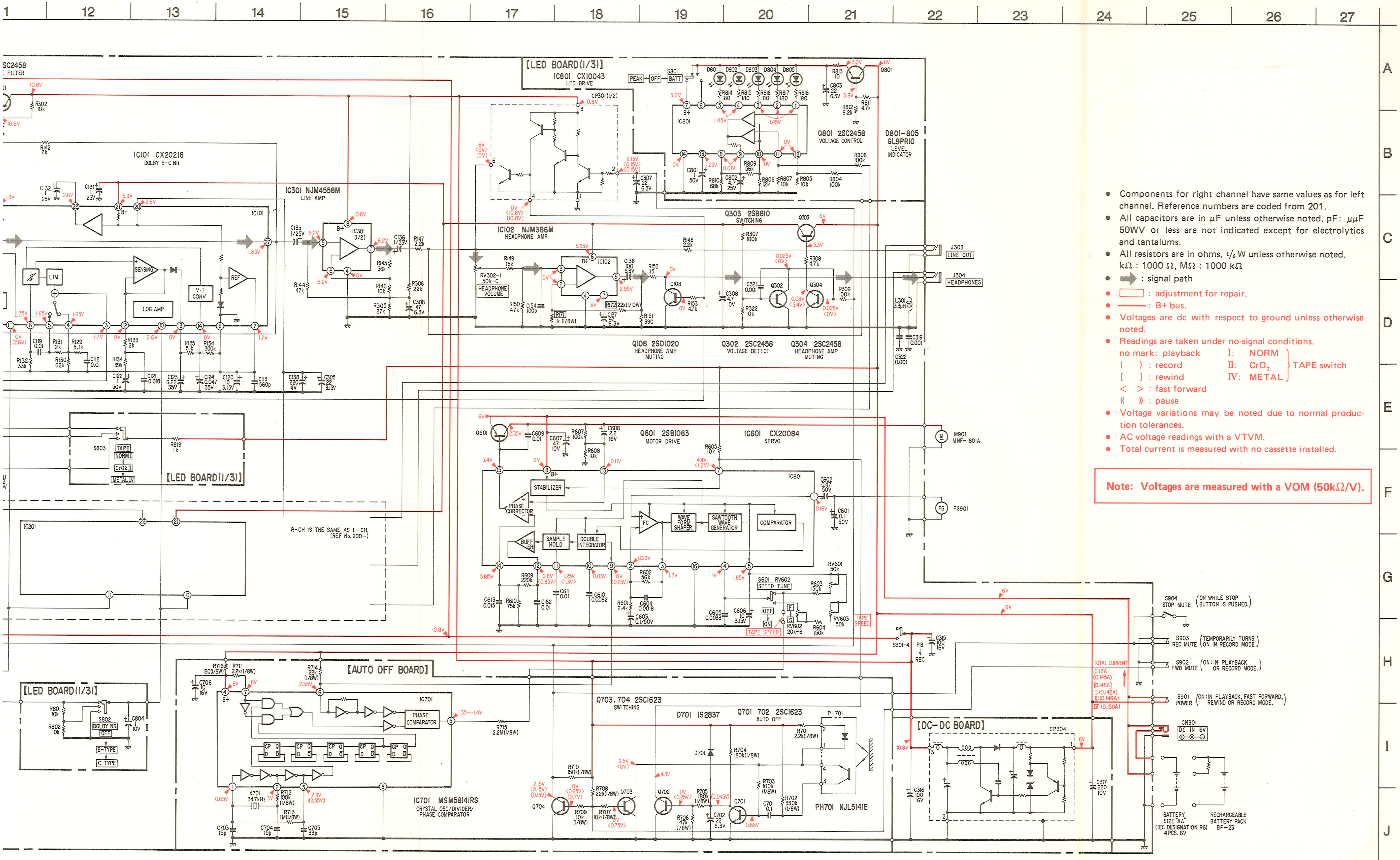
- See page 3 for Semiconductor lead layouts and note.


[LED BOARD]
[MAIN BOARD]
HRP901 REC/PB HEAD
R-CH
L-CH
PB OUTPUT
I:(AC5.1V)
II:(AC10.1V)
IV:(AC14.5V)
S803 TAPE NORM I CrO2 II METAL IV
S802 DOLBY NR C-TYPE B-TYPE OFF
S801 BATT OFF PEAK
IC801
Q801
D801 D802 D803 D804 D805
S302 MIC ATT 0dB 20dB
RV301 REC LEVEL
J301 MIC
PLUG IN POWER
J302 LINE IN
J303 LINE OUT
J304 HEADPHONES
RV302 HEADPHONE VOLUME
S601 SPEED TUNE ON OFF
RV602 SPEED TUNE
CN301 DC IN 6V
IC101 IC102 IC201 IC202 IC301 IC302
FG901
HE901 ERASE HEAD
I:(AC18.5V)
II:(AC25.5V)
IV:(AC64V)
S901 POWER (ON: IN PLAYBACK, FAST FORWARD, REWIND OR RECORD MODE.)
[SPECT


HRP901
REC/PB HEAD
L-CH
J302
LINE IN
J303
LINE OUT
S601 SPEED TUNE
RV602
SPEED TUNE
CN301
DC IN 6V
IC101
IC201
IC202
IC102
IC301
IC601
IC701
[SPECTRAL SKEWING(R-CH) BOARD]
[SPECTRAL SKEWING(L-CH) BOARD]
[DC-DC BOARD]
CP304
DC-DC CONVERTER
[AUTO OFF BOARD]
HE901
ERASE HEAD
M901
MOTOR
FG901
RECHARGEABLE BATTERY PACK BP-23
BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PC. 6V
I:(AC18.5V)
II:(AC25.5V)
IV:(AC64V)
S903
REC MUTE
(TEMPORARILY TURNS ON IN RECORD MODE.)
S902
FWD MUTE
(ON:IN PLAYBACK OR RECORD MODE.)
S904
STOP MUTE
(WHILE PUSHING STOP BUTTON, STOP LEVER IS CONTACT WITH TERMINAL PLATE.)
TERMINAL PLATE
STOP LEVER
(CHASSIS GROUND)
HEADPHONE VOLUME
RV302
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
A
B
C
D
E
F
G
H
I
J

SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
[MAIN BOARD]
J302 LINE IN
J301 MIC
PLUG IN POWER
Q102,103 2SC2458L
MIC AMP
Q301 2SC2458
RIPPLE FILTER
RV301-1 50k-A
REC LEVEL
CP101
[SPECTRAL SKEWING BOARD (L-CH)]
IC101 CX20218
DOLBY B-C NR
IC301 NJM4558M
LINE AMP
Q101 2SA1048L
MIC AMP
S302-1
0dB
ATT
20dB
Q107 2SC1623
PB EQ SWITCH
L-CH
HRP901-1
PA259-3602A
REC/PB HEAD
S301-1
PB
REC
INPUT AMP
BUFFER
LIM
SENSING
V-I CONV
LOG AMP
REF
PB LEVEL
Q104-106 2SC2458L
PB EQ AMP
IC302 NJM4558M
REC EQ AMP
REC LEVEL
REC BIAS
Q109 2SC1623
REC EQ MUTING
D303 1S1555
S803
TAPE
NORM I
CrO2 II
METAL IV
[LED BOARD(1/3)]
CP302
CP303
R-CH
HRP901-2
PA259-3602A
REC/PB HEAD
R-CH IS THE SAME AS L-CH. (REF No. 200-)
IC201
R-CH IS THE SAME AS L-CH. (REF No. 200-)
D302
T301
BIAS OSC
Q308
HE901
EF201-36
ERASE HEAD
Q308 2SB810
SWITCHING
Q309 2SC2458
BIAS TIMING
Q307 2SC2001
BIAS OSC
Q305,306 2SD1020
BIAS SWITCHING
D302 1S1555
S301-3
PB
REC
[LED BOARD(1/3)]
S802
DOLBY NR
OFF
B-TYPE
C-TYPE
[AUTO OFF BOARD]
IC701
PHASE COMPARATOR
X701 34.7kHz
IC701 MSM5814IRS
CRYSTAL OSC/DIVIDER/
PHASE COMPARATOR


11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
A
B
C
D
E
F
G
H
I
J
IC101 CX20218
DOLBY B-C NR
IC301 NJM4558M
LINE AMP
[LED BOARD(1/3)]
IC801 CX10043
LED DRIVE
Q801 2SC2458
VOLTAGE CONTROL
D801-805 GL9PR10
LEVEL INDICATOR
Q303 2SB810
SWITCHING
IC102 NJM386M
HEADPHONE AMP
RV302-1 50k-C
HEADPHONE VOLUME
Q108 2SD1020
HEADPHONE AMP MUTING
Q302 2SC2458
VOLTAGE DETECT
Q304 2SC2458
HEADPHONE AMP MUTING
J303 LINE OUT
J304 HEADPHONES
SENSING
LIM
LOG AMP
V-I CONV
REF
S803
TAPE
NORM I
CrO2 II
METAL IV
[LED BOARD(1/3)]
IC201
R-CH IS THE SAME AS L-CH. (REF No. 200~)
Q601 2SB1063
MOTOR DRIVE
IC601 CX20084
SERVO
M901 MNF-1601A
FG901
STABILIZER
PHASE CORRECTOR
FG
WAVE FORM SHAPER
SAWTOOTH WAVE GENERATOR
COMPARATOR
BUFFER
SAMPLE HOLD
DOUBLE INTEGRATOR
S601 RV602 SPEED TUNE
RV601 50k
RV603 50k
TAPE SPEED
S904 STOP MUTE (ON WHILE STOP BUTTON IS PUSHED.)
S903 REC MUTE (TEMPORARILY TURNS ON IN RECORD MODE.)
S902 FWD MUTE (ON:IN PLAYBACK OR RECORD MODE.)
S901 POWER (ON:IN PLAYBACK, FAST FORWARD, REWIND OR RECORD MODE.)
S301-4 PB REC
[AUTO OFF BOARD]
IC701 MSM5814IRS
CRYSTAL OSC/DIVIDER/PHASE COMPARATOR
PHASE COMPARATOR
X701 34.7kHz
Q703,704 2SC1623
SWITCHING
D701 1S2837
Q701 702 2SC1623
AUTO OFF
PH701 NJL5141E
[LED BOARD(1/3)]
S802 DOLBY NR OFF B-TYPE C-TYPE
[DC-DC BOARD]
CP304
TOTAL CURRENT 0.12A (0.145A) [0.148A] I:(0.142A) II:(0.146A) IV:(0.150A)
CN301 DC IN 6V
BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PCS. 6V
RECHARGEABLE BATTERY PACK BP-23

- Components for right channel have same values as for left channel. Reference numbers are coded from 201.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- ➡ : signal path
- ▭ : adjustment for repair.
- ―― : B+ bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions.

no mark:	playback	I:	NORM	TAPE switch
(　) :	record	II:	CrO$_2$	
[　] :	rewind	IV:	METAL	
<　> :	fast forward			
((　)) :	pause			

- Voltage variations may be noted due to normal production tolerances.
- AC voltage readings with a VTVM.
- Total current is measured with no cassette installed.

Note: Voltages are measured with a VOM (50kΩ/V).

WM-D6C/TC-D6C

SONY®

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-2

File this supplement with the service manual.

Subject: Change of the Main Board.

This Supplement-2 contains only the information about WM-D6C.
The printed circuit boards changes to the new one.
The spectral skewing board and the DC-DC board are built in the new main board.

Destination	Serial No.
US	After 267,201
Canadian	After 270,001
AEP	After 269,301
UK	After 269,601
E	After 270,001

- **SCHEMATIC DIAGRAM**
- **PRINTED WIRING BOARD**
- **ELECTRICAL PARTS LIST**

9-951-385-82

Sony Corporation
General Audio Group

English
94C05103-1
Printed in Japan

© 1994. 3

Published by Audio Sector Quality Assurance Dept.

SECTION 5 EXPLODED VIEWS AND PARTS LIST

(Service Manual see pages 31 to 36)

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3060-814-A	AUTO OFF BOARD, COMPLETE			
		************************			
*	3-308-430-00	RETAINER, REFLECTOR, PHOTO			
		< CAPACITOR >			
C701	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C702	1-135-161-21	TANTALUM CHIP	22uF	10%	10V
C703	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C704	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C705	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C706	1-135-159-21	TANTALUM CHIP	10uF	10%	20V
		< DIODE >			
D701	8-719-801-78	DIODE 1SS184			
		< IC >			
IC701	8-759-958-14	IC MSM58141RS			
		< PHOTO INTERRUPTER >			
PH701	8-719-751-42	DIODE NJL5141E-AA			
		< TRANSISTOR >			
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q702	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q703	8-729-420-50	TRANSISTOR UN5215			
Q704	8-729-420-50	TRANSISTOR UN5215			
		< RESISTOR >			
R701	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R702	1-216-109-00	METAL CHIP	330K	5%	1/10W
R703	1-216-097-00	METAL CHIP	100K	5%	1/10W
R704	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R705	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R706	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R708	1-216-081-00	METAL CHIP	22K	5%	1/10W
R710	1-216-101-00	METAL CHIP	150K	5%	1/10W
R711	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R712	1-216-097-00	METAL CHIP	100K	5%	1/10W
R713	1-216-121-00	METAL CHIP	1M	5%	1/10W
R714	1-216-081-00	METAL CHIP	22K	5%	1/10W
R715	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R716	1-216-031-00	METAL CHIP	180	5%	1/10W
		< VIBRATOR >			
X701	1-527-957-00	OSCILLATOR, CRYSTAL (34.7KHz)			
		**			
*	A-3060-816-A	LED BOARD, COMPLETE			
		******************			
*	3-305-888-00	RETAINER			
	3-305-897-00	HOLDER, LED			
	3-557-575-00	SPRING, COMPRESSION			
	3-831-441-XX	SPACER			
	4-017-441-01	CUSHION (B)			
	7-627-451-38	SCREW, PRECISION +K 1.4X2			
		< CAPACITOR >			
C801	1-126-193-11	ELECT	1uF	20%	50V
C802	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C803	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C804	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
		< DIODE >			
D801	8-719-915-54	DIODE SLP159B			
D802	8-719-915-54	DIODE SLP159B			
D803	8-719-915-54	DIODE SLP159B			
D804	8-719-915-54	DIODE SLP159B			
D805	8-719-915-54	DIODE SLP159B			
		< IC >			
IC801	8-752-060-72	IC CX10043-T4			
		< TRANSISTOR >			
Q801	8-729-120-28	TRANSISTOR 2SC1623-L5L6			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R802	1-216-073-00	METAL CHIP	10K	5%	1/10W
R804	1-216-097-00	METAL CHIP	100K	5%	1/10W
R805	1-216-073-00	METAL CHIP	10K	5%	1/10W
R806	1-216-097-00	METAL CHIP	100K	5%	1/10W
R807	1-216-073-00	METAL CHIP	10K	5%	1/10W
R808	1-216-075-00	METAL CHIP	12K	5%	1/10W
R809	1-216-091-00	METAL CHIP	56K	5%	1/10W
R810	1-216-093-00	METAL CHIP	68K	5%	1/10W
R811	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R812	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R813	1-216-001-00	METAL CHIP	10	5%	1/10W
R814	1-216-031-00	METAL CHIP	180	5%	1/10W
R815	1-216-031-00	METAL CHIP	180	5%	1/10W
R816	1-216-031-00	METAL CHIP	180	5%	1/10W
R817	1-216-031-00	METAL CHIP	180	5%	1/10W
R818	1-216-031-00	METAL CHIP	180	5%	1/10W
R819	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
S801	1-554-746-11	SWITCH, SLIDE (PEAK/BATT)			
S802	1-552-642-00	SWITCH (DOLBY NR)			
S803	1-552-642-00	SWITCH (TAPE)			
		**			
*	A-3060-812-A	MAIN BOARD, COMPLETE			
		**********************			
	3-305-801-00	SPRING			
	3-305-868-00	KNOB, SPEED CONTROL			
	3-305-873-00	TERMINAL BOARD, BATTERY			
	3-701-436-11	WASHER, 1.6 POLYETHYLENE			
	3-831-441-XX	SPACER			
	7-627-552-38	SCREW, PRECISION +P 1.7X3			
		< CAPACITOR >			
C101	1-128-594-11	ELECT CHIP	1uF	20%	50V
C102	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C103	1-126-207-11	ELECT CHIP	33uF	20%	4V
C104	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C105	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C106	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C107	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C108	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C109	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C110	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C111	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C112	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C113	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C114	1-104-555-11	FILM CHIP	0.022uF	5%	16V
C115	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C116	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C117	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C118	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C119	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C120	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C121	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C122	1-126-193-11	ELECT	1uF	20%	50V
C123	1-135-072-21	TANTALUM CHIP	0.22uF	10%	35V
C124	1-104-559-11	FILM CHIP	0.047uF	5%	16V
C125	1-104-559-11	FILM CHIP	0.047uF	5%	16V
C126	1-104-559-11	FILM CHIP	0.047uF	5%	16V
C127	1-135-070-00	TANTALUM CHIP	0.1uF	10%	35V
C128	1-135-072-21	TANTALUM CHIP	0.22uF	10%	35V
C129	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C130	1-126-190-11	ELECT	0.33uF	20%	50V
C131	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C132	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C133	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C134	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C135	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C136	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C137	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C138	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C139	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C141	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C142	1-135-070-00	TANTALUM CHIP	0.1uF	10%	35V
C143	1-135-179-21	TANTAL. CHIP	2.2uF	10%	16V
C144	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C145	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C146	1-104-553-11	FILM CHIP	0.015uF	5%	16V
C147	1-104-552-11	FILM CHIP	0.012uF	5%	16V
C148	1-104-553-11	FILM CHIP	0.015uF	5%	16V
C149	1-109-809-91	CAP, CHIP MICA	2.2PF	0.25PF	100V
C151	1-163-988-11	CERAMIC CHIP	180PF	5%	100V
C152	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C153	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C154	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C155	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C201	1-128-594-11	ELECT CHIP	1uF	20%	50V
C202	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C203	1-126-207-11	ELECT CHIP	33uF	20%	4V
C204	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C205	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C206	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C207	1-126-603-11	ELECT CHIP	4.7uF	20%	35V

Ref. No.	Part No.	Description			Remark
C208	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C209	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C210	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C211	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C212	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C213	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C214	1-104-555-11	FILM CHIP	0.022uF	5%	16V
C215	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C216	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C217	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C218	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C219	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C220	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C221	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C222	1-126-193-11	ELECT	1uF	20%	50V
C223	1-135-072-21	TANTALUM CHIP	0.22uF	10%	35V
C224	1-104-559-11	FILM CHIP	0.047uF	5%	16V
C225	1-104-559-11	FILM CHIP	0.047uF	5%	16V
C226	1-104-559-11	FILM CHIP	0.047uF	5%	16V
C227	1-135-070-00	TANTALUM CHIP	0.1uF	10%	35V
C228	1-135-072-21	TANTALUM CHIP	0.22uF	10%	35V
C229	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C230	1-126-190-11	ELECT	0.33uF	20%	50V
C231	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C232	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C233	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C234	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C235	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C236	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C237	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C238	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C239	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C241	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C242	1-135-070-00	TANTALUM CHIP	0.1uF	10%	35V
C243	1-135-179-21	TANTAL. CHIP	2.2uF	10%	16V
C244	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C245	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C246	1-104-553-11	FILM CHIP	0.015uF	5%	16V
C247	1-104-552-11	FILM CHIP	0.012uF	5%	16V
C248	1-104-553-11	FILM CHIP	0.015uF	5%	16V
C249	1-109-809-91	CAP, CHIP MICA	2.2PF	0.25PF	100V
C251	1-163-988-11	CERAMIC CHIP	180PF	5%	100V
C252	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C253	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C254	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C255	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C301	1-126-395-11	ELECT	22uF	20%	16V
C302	1-135-159-21	TANTALUM CHIP	10uF	10%	20V
C303	1-124-779-00	ELECT CHIP	10uF	20%	16V
C304	1-126-395-11	ELECT	22uF	20%	16V
C305	1-135-202-21	TANTAL. CHIP	22uF	20%	4V
C306	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C307	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C308	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C309	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C310	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C311	1-130-896-00	FILM	0.0082uF	5%	400V
C312	1-135-179-21	TANTAL. CHIP	2.2uF	10%	16V
C313	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C314	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C316	1-124-120-11	ELECT	220uF	20%	25V
C317	1-124-120-11	ELECT	220uF	20%	25V
C318	1-126-246-11	ELECT CHIP	220uF	20%	4V
C319	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C320	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C321	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C322	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C601	1-126-187-11	ELECT	0.1uF	20%	50V
C602	1-126-191-11	ELECT	0.47uF	20%	50V
C603	1-126-189-11	ELECT	0.22uF	20%	50V
C604	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C605	1-130-865-11	FILM	0.0033uF	5%	50V
C606	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C607	1-126-204-11	ELECT CHIP	47uF	20%	16V
C608	1-135-092-21	TANTALUM CHIP	3.3uF	10%	16V
C609	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C610	1-104-550-11	FILM CHIP	0.0082uF	5%	16V
C611	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C612	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C613	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C614	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
		< CONNECTOR >			
CN301	1-507-749-00	JACK, EXTENTION POWER (DC IN 6V)			
		< COMPOSITION CIRCUIT BLOCK >			
CP101	1-235-317-11	FILTER, LOW PASS			
CP102	1-235-318-11	FILTER, SP-SK			
CP201	1-235-317-11	FILTER, LOW PASS			
CP202	1-235-318-11	FILTER, SP-SK			
CP304	1-464-183-21	CONVERTER UNIT, DC-DC			
		< DIODE >			
D302	8-719-801-78	DIODE 1SS184			
D303	8-719-801-78	DIODE 1SS184			

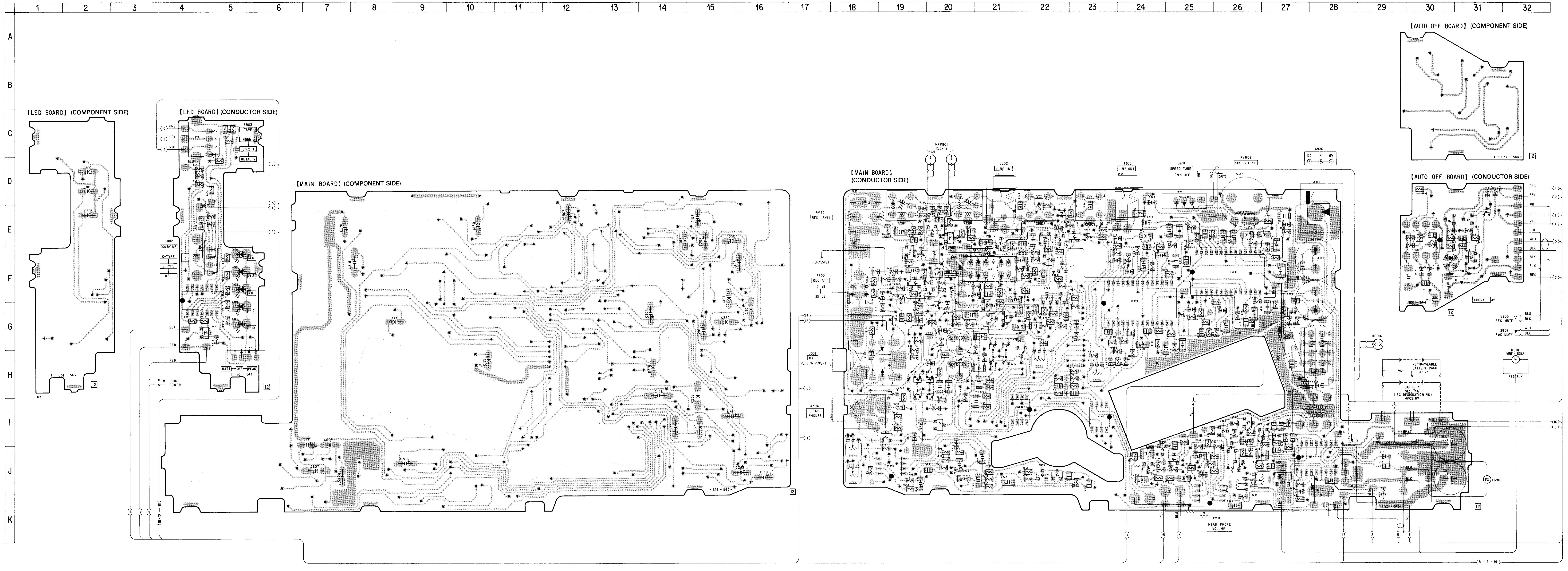
SECTION 4 DIAGRAMS

(Service Manual see pages 20 to 25)

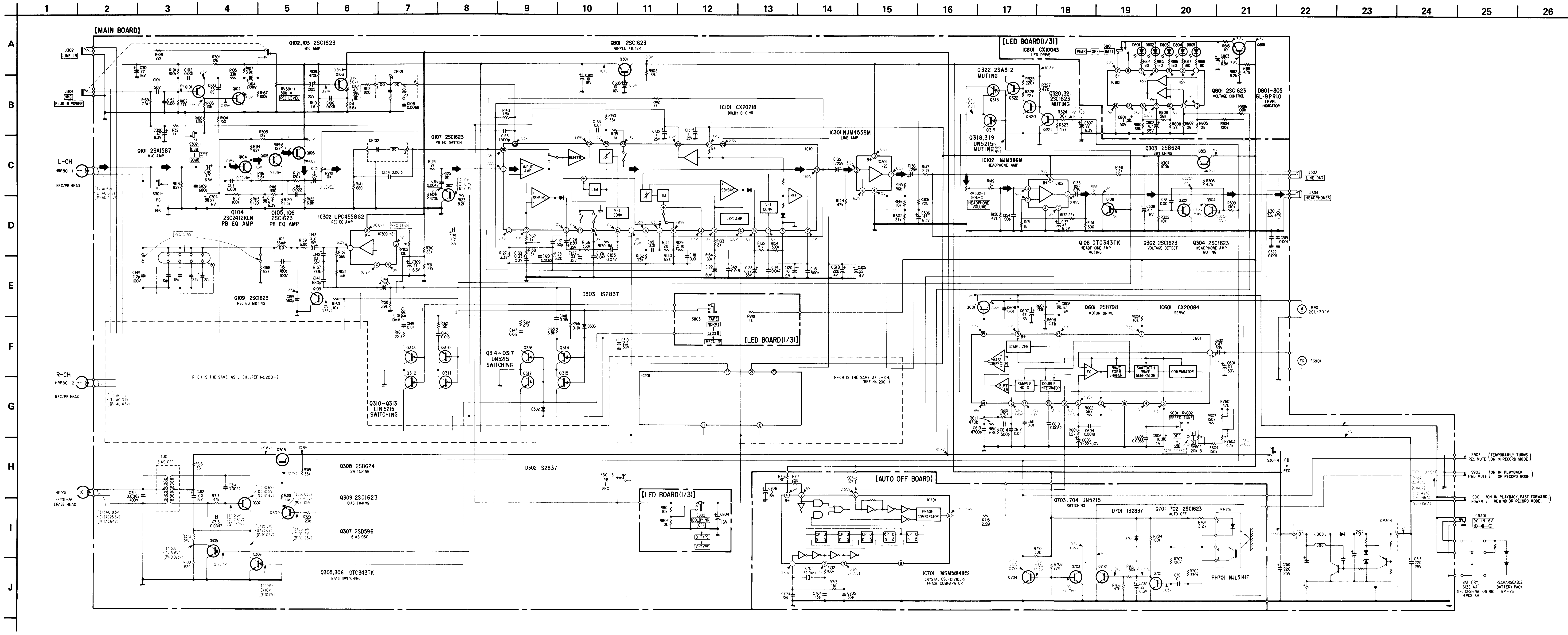
PRINTED WIRING BOARDS

- **Semiconductor Location**

Ref. No.	Location
D302	H-21
D303	I-20
D701	E-30
D801	G-5
D802	G-5
D803	F-5
D804	F-5
D805	F-5
IC101	G-24
IC102	I-23
IC201	F-26
IC202	I-21
IC301	J-25
IC302	J-19
IC601	J-28
IC701	E-30
IC801	F-4
PH701	F-30
Q101	F-19
Q102	F-19
Q103	E-19
Q104	E-21
Q105	E-22
Q106	F-22
Q107	F-22
Q108	I-19
Q109	J-22
Q201	G-20
Q202	F-20
Q203	E-20
Q204	G-21
Q205	G-21
Q206	G-21
Q207	F-22
Q208	H-19
Q209	J-22
Q301	E-20
Q302	J-25
Q303	J-24
Q304	J-24
Q305	J-26
Q306	J-26
Q307	I-27
Q308	I-26
Q309	I-26
Q310	H-19
Q311	H-20
Q312	H-19
Q313	H-20
Q314	H-21
Q315	H-21
Q316	G-21
Q317	G-21
Q318	E-22
Q319	E-23
Q320	E-23
Q321	F-22
Q322	E-22
Q601	J-27
Q701	F-31
Q702	E-31
Q703	F-31
Q704	E-31
Q801	G-4


[LED BOARD] (COMPONENT SIDE)
[LED BOARD] (CONDUCTOR SIDE)
[MAIN BOARD] (COMPONENT SIDE)
[MAIN BOARD] (CONDUCTOR SIDE)
[AUTO OFF BOARD] (COMPONENT SIDE)
[AUTO OFF BOARD] (CONDUCTOR SIDE)
S901 POWER
RV301 REC LEVEL
S302 REC ATT
J301 MIC (PLUG IN POWER)
J304 HEAD PHONES
HRP901 REC/PB
J302 LINE IN
J303 LINE OUT
S601 SPEED TUNE
RV602 SPEED TUNE
CN301
HEAD PHONE VOLUME
RECHARGEABLE BATTERY PACK
COUNTER
S905 REC MUTE
S902 FWD MUTE
M901

SCHEMATIC DIAGRAM


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
A B C D E F G H I J
[MAIN BOARD]
J302 LINE IN
J301 MIC
PLUG IN POWER
L-CH
HRP901-1
REC/PB HEAD
R-CH
HRP901-2
REC/PB HEAD
HE901
EF201-36
ERASE HEAD
Q101 2SA1587
MIC AMP
Q102,103 2SC1623
MIC AMP
RV301-1
50k-A
REC LEVEL
S302-1
0dB
ATT
20dB
S301-1
PB
REC
Q104
2SC2412KLN
PB EQ AMP
Q105,106
2SC1623
PB EQ AMP
PB LEVEL
Q107 2SC1623
PB EQ SWITCH
IC302 UPC4558G2
REC EQ AMP
REC LEVEL
REC BIAS
Q109 2SC1623
REC EQ MUTING
Q301 2SC1623
RIPPLE FILTER
IC101 CX20218
DOLBY B-C NR
INPUT AMP
BUFFER
LIM
SENSING
V·I CONV
LOG AMP
REF
IC301 NJM4558M
LINE AMP
D303 1S2837
S803
TAPE
NORM I
CrO2 II
METAL IV
[LED BOARD(1/3)]
R-CH IS THE SAME AS L-CH. (REF No. 200-)
Q310~Q313
UN5215
SWITCHING
Q314~Q317
UN5215
SWITCHING
D302
IC201
T301
BIAS OSC
Q308 2SB624
SWITCHING
Q309 2SC1623
BIAS TIMING
Q307 2SD596
BIAS OSC
Q305,306 DTC343TK
BIAS SWITCHING
D302 1S2837
S301-3
PB
REC
S802
DOLBY NR
OFF
B-TYPE
C-TYPE
IC801 CX10043
LED DRIVE
S801
PEAK
OFF
BATT
D801 D802 D803 D804 D805
Q801 2SC1623
VOLTAGE CONTROL
D801-805
GL-9PR10
LEVEL INDICATOR
Q322 2SA812
MUTING
Q320,321
2SC1623
MUTING
Q318,319
UN5215
MUTING
IC102 NJM386M
HEADPHONE AMP
RV302-1
50k-C
HEADPHONE VOLUME
Q303 2SB624
SWITCHING
Q108 DTC343TK
HEADPHONE AMP
MUTING
Q302 2SC1623
VOLTAGE DETECT
Q304 2SC1623
HEADPHONE AMP
MUTING
J303
LINE OUT
J304
HEADPHONES
Q601 2SB798
MOTOR DRIVE
IC601 CX20084
SERVO
STABILIZER
PHASE CORRECTOR
FG
WAVE FORM SHAPER
SAWTOOTH WAVE GENERATOR
COMPARATOR
BUFFER
SAMPLE HOLD
DOUBLE INTEGRATOR
S601 RV602
SPEED TUNE
M901
12CL-3026
FG901
S301-4
PB
REC
[AUTO OFF BOARD]
IC701
PHASE COMPARATOR
IC701 MSM5814IRS
CRYSTAL OSC/DIVIDER/
PHASE COMPARATOR
X701
34.7kHz
Q703,704 UN5215
SWITCHING
D701 1S2837
Q701 702 2SC1623
AUTO OFF
PH701 NJL5141E
CP304
TOTAL CURRENT
S903 REC MUTE (TEMPORARILY TURNS ON IN RECORD MODE.)
S902 FWD MUTE (ON: IN PLAYBACK OR RECORD MODE.)
S901 POWER (ON: IN PLAYBACK, FAST FORWARD, REWIND OR RECORD MODE.)
CN301
DC IN 6V
BATTERY
SIZE "AA"
(IEC DESIGNATION R6)
4PCS. 6V
RECHARGEABLE BATTERY PACK
BP-23

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- ▬ : B + Line.
- ☐ : panel designation.
- ☐ : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Total current is measured with no cassette installed.
- Power voltage is dc 6 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark : playback
  - ( ) : record
  - < > : fast forward
  - [ ] : rewind
  - (( )) : pause
    - I : NORM
    - II : CrO2
    - IV : METAL
    - TAPE switch
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : PB

Note on Printed Wiring Board:

- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

< IC >

Ref. No.	Part No.	Description		Remark
IC101	8-752-070-19	IC	CX20218-T6	
IC102	8-759-700-50	IC	NJM386M	
IC201	8-752-070-19	IC	CX20218-T6	
IC202	8-759-700-50	IC	NJM386M	
IC301	8-759-100-96	IC	uPC4558G2	
IC302	8-759-100-96	IC	uPC4558G2	
IC601	8-759-909-45	IC	CX20084	

< JACK >

Ref. No.	Part No.	Description		Remark
J301	1-507-794-31	JACK, SMALL TYPE (WITH SWITCH)(MIC)		
J302	1-507-929-41	JACK (LINE IN)		
J303	1-507-929-41	JACK (LINE OUT)		
J304	1-507-929-11	JACK (HEADPHONES)		

< COIL >

Ref. No.	Part No.	Description		Remark
L101	1-408-682-00	INDUCTOR	10mH	
L102	1-408-930-00	INDUCTOR	33mH	
L201	1-408-682-00	INDUCTOR	10mH	
L202	1-408-930-00	INDUCTOR	33mH	
L301	1-410-198-51	INDUCTOR CHIP	3.3uH	

< TRANSISTOR >

Ref. No.	Part No.	Description		Remark
Q101	8-729-013-29	TRANSISTOR	2SA1587-GRBL-TE85L	
Q102	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q103	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q104	8-729-016-80	TRANSISTOR	2SC2412KLN-T146-R	
Q105	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q106	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q107	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q108	8-729-920-31	TRANSISTOR	DTC343TK	
Q109	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q201	8-729-013-29	TRANSISTOR	2SA1587-GRBL-TE85L	
Q202	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q203	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q204	8-729-016-80	TRANSISTOR	2SC2412KLN-T146-R	
Q205	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q206	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q207	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q208	8-729-920-31	TRANSISTOR	DTC343TK	
Q209	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q301	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q302	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q303	8-729-162-45	TRANSISTOR	2SB624-BV5	
Q304	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q305	8-729-920-31	TRANSISTOR	DTC343TK	
Q306	8-729-920-31	TRANSISTOR	DTC343TK	
Q307	8-729-141-75	TRANSISTOR	2SD596DV345	
Q308	8-729-162-45	TRANSISTOR	2SB624-BV5	
Q309	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q310	8-729-420-50	TRANSISTOR	UN5215	
Q311	8-729-420-50	TRANSISTOR	UN5215	
Q312	8-729-420-50	TRANSISTOR	UN5215	
Q313	8-729-420-50	TRANSISTOR	UN5215	
Q314	8-729-420-50	TRANSISTOR	UN5215	
Q315	8-729-420-50	TRANSISTOR	UN5215	
Q316	8-729-420-50	TRANSISTOR	UN5215	
Q317	8-729-420-50	TRANSISTOR	UN5215	
Q318	8-729-420-50	TRANSISTOR	UN5215	
Q319	8-729-420-50	TRANSISTOR	UN5215	
Q320	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q321	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q322	8-729-216-22	TRANSISTOR	2SA1162-G	
Q601	8-729-101-07	TRANSISTOR	2SB798-DL	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W
R102	1-216-083-00	METAL CHIP	27K	5%	1/10W
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-029-00	METAL CHIP	150	5%	1/10W
R105	1-216-085-00	METAL CHIP	33K	5%	1/10W
R106	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R107	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R108	1-216-081-00	METAL CHIP	22K	5%	1/10W
R109	1-216-113-00	METAL CHIP	470K	5%	1/10W
R110	1-216-121-00	METAL CHIP	1M	5%	1/10W
R111	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R112	1-216-047-00	METAL CHIP	820	5%	1/10W
R113	1-216-095-00	METAL CHIP	82K	5%	1/10W
R114	1-216-095-00	METAL CHIP	82K	5%	1/10W
R115	1-216-027-00	METAL CHIP	120	5%	1/10W
R116	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R117	1-216-097-00	METAL CHIP	100K	5%	1/10W
R118	1-216-037-00	METAL CHIP	330	5%	1/10W
R119	1-216-075-00	METAL CHIP	12K	5%	1/10W
R120	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R121	1-216-099-00	METAL CHIP	120K	5%	1/10W
R122	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R123	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R124	1-216-075-00	METAL CHIP	12K	5%	1/10W
R125	1-216-079-00	METAL CHIP	18K	5%	1/10W
R126	1-216-113-00	METAL CHIP	470K	5%	1/10W
R127	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R128	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R129	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R130	1-216-092-00	METAL GLAZE	62K	5%	1/10W
R131	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R132	1-216-085-00	METAL CHIP	33K	5%	1/10W
R133	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R134	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R135	1-216-090-00	METAL CHIP	51K	5%	1/10W
R136	1-216-109-00	METAL CHIP	330K	5%	1/10W
R137	1-216-049-00	METAL CHIP	1K	5%	1/10W
R138	1-216-076-00	METAL CHIP	13K	5%	1/10W
R139	1-216-076-00	METAL CHIP	13K	5%	1/10W
R140	1-216-085-00	METAL CHIP	33K	5%	1/10W
R141	1-216-045-00	METAL CHIP	680	5%	1/10W
R142	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R143	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R144	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R145	1-216-091-00	METAL CHIP	56K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R148	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R149	1-216-077-00	METAL CHIP	15K	5%	1/10W
R150	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R151	1-216-039-00	METAL CHIP	390	5%	1/10W
R152	1-216-005-00	METAL CHIP	15	5%	1/10W
R154	1-216-108-00	METAL GLAZE	300K	5%	1/10W
R155	1-216-085-00	METAL CHIP	33K	5%	1/10W
R156	1-216-091-00	METAL CHIP	56K	5%	1/10W
R157	1-216-097-00	METAL CHIP	100K	5%	1/10W
R158	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R159	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R160	1-216-073-00	METAL CHIP	10K	5%	1/10W
R161	1-216-033-00	METAL CHIP	220	5%	1/10W
R162	1-216-029-00	METAL CHIP	150	5%	1/10W
R163	1-216-035-00	METAL CHIP	270	5%	1/10W
R165	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R166	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R167	1-216-097-00	METAL CHIP	100K	5%	1/10W
R168	1-216-095-00	METAL CHIP	82K	5%	1/10W
R169	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R170	1-216-121-00	METAL CHIP	1M	5%	1/10W
R171	1-216-049-00	METAL CHIP	1K	5%	1/10W
R172	1-216-081-00	METAL CHIP	22K	5%	1/10W
R201	1-216-097-00	METAL CHIP	100K	5%	1/10W
R202	1-216-083-00	METAL CHIP	27K	5%	1/10W
R203	1-216-073-00	METAL CHIP	10K	5%	1/10W
R204	1-216-029-00	METAL CHIP	150	5%	1/10W
R205	1-216-085-00	METAL CHIP	33K	5%	1/10W
R206	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R207	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R208	1-216-081-00	METAL CHIP	22K	5%	1/10W
R209	1-216-113-00	METAL CHIP	470K	5%	1/10W
R210	1-216-121-00	METAL CHIP	1M	5%	1/10W
R211	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R212	1-216-047-00	METAL CHIP	820	5%	1/10W
R213	1-216-095-00	METAL CHIP	82K	5%	1/10W
R214	1-216-095-00	METAL CHIP	82K	5%	1/10W
R215	1-216-027-00	METAL CHIP	120	5%	1/10W
R216	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R217	1-216-097-00	METAL CHIP	100K	5%	1/10W
R218	1-216-037-00	METAL CHIP	330	5%	1/10W
R219	1-216-075-00	METAL CHIP	12K	5%	1/10W
R220	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R221	1-216-099-00	METAL CHIP	120K	5%	1/10W
R222	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R223	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R224	1-216-075-00	METAL CHIP	12K	5%	1/10W
R225	1-216-079-00	METAL CHIP	18K	5%	1/10W
R226	1-216-113-00	METAL CHIP	470K	5%	1/10W
R227	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R228	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R229	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R230	1-216-092-00	METAL GLAZE	62K	5%	1/10W
R231	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R232	1-216-085-00	METAL CHIP	33K	5%	1/10W
R233	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R234	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R235	1-216-090-00	METAL CHIP	51K	5%	1/10W
R236	1-216-109-00	METAL CHIP	330K	5%	1/10W
R237	1-216-049-00	METAL CHIP	1K	5%	1/10W
R238	1-216-076-00	METAL CHIP	13K	5%	1/10W
R239	1-216-076-00	METAL CHIP	13K	5%	1/10W
R240	1-216-085-00	METAL CHIP	33K	5%	1/10W
R241	1-216-045-00	METAL CHIP	680	5%	1/10W
R242	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R243	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R244	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R245	1-216-091-00	METAL CHIP	56K	5%	1/10W
R246	1-216-073-00	METAL CHIP	10K	5%	1/10W
R247	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R248	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R249	1-216-077-00	METAL CHIP	15K	5%	1/10W
R250	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R251	1-216-039-00	METAL CHIP	390	5%	1/10W
R252	1-216-005-00	METAL CHIP	15	5%	1/10W
R254	1-216-108-00	METAL GLAZE	300K	5%	1/10W
R255	1-216-085-00	METAL CHIP	33K	5%	1/10W
R256	1-216-091-00	METAL CHIP	56K	5%	1/10W
R257	1-216-097-00	METAL CHIP	100K	5%	1/10W
R258	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R259	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R260	1-216-073-00	METAL CHIP	10K	5%	1/10W
R261	1-216-033-00	METAL CHIP	220	5%	1/10W
R262	1-216-029-00	METAL CHIP	150	5%	1/10W
R263	1-216-035-00	METAL CHIP	270	5%	1/10W
R265	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R266	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R267	1-216-097-00	METAL CHIP	100K	5%	1/10W
R268	1-216-095-00	METAL CHIP	82K	5%	1/10W
R269	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R270	1-216-121-00	METAL CHIP	1M	5%	1/10W
R271	1-216-049-00	METAL CHIP	1K	5%	1/10W
R272	1-216-081-00	METAL CHIP	22K	5%	1/10W
R301	1-216-075-00	METAL CHIP	12K	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R303	1-216-075-00	METAL CHIP	12K	5%	1/10W
R305	1-216-083-00	METAL CHIP	27K	5%	1/10W
R306	1-216-081-00	METAL CHIP	22K	5%	1/10W
R307	1-216-097-00	METAL CHIP	100K	5%	1/10W
R308	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R309	1-216-097-00	METAL CHIP	100K	5%	1/10W
R310	1-216-081-00	METAL CHIP	22K	5%	1/10W
R311	1-216-083-00	METAL CHIP	27K	5%	1/10W
R312	1-216-044-00	METAL CHIP	620	5%	1/10W
R313	1-216-042-00	METAL CHIP	510	5%	1/10W
R316	1-216-013-00	METAL CHIP	33	5%	1/10W
R317	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R318	1-216-085-00	METAL CHIP	33K	5%	1/10W
R319	1-216-085-00	METAL CHIP	33K	5%	1/10W
R320	1-216-099-00	METAL CHIP	120K	5%	1/10W
R321	1-216-049-00	METAL CHIP	1K	5%	1/10W
R322	1-216-073-00	METAL CHIP	10K	5%	1/10W
R323	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R324	1-216-097-00	METAL CHIP	100K	5%	1/10W
R325	1-216-105-00	METAL CHIP	220K	5%	1/10W
R326	1-216-081-00	METAL CHIP	22K	5%	1/10W
R327	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R601	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R602	1-216-091-00	METAL CHIP	56K	5%	1/10W
R603	1-218-756-11	METAL CHIP	150K	0.5%	1/10W
R604	1-218-756-11	METAL CHIP	150K	0.5%	1/10W
R605	1-216-073-00	METAL CHIP	10K	5%	1/10W
R607	1-216-097-00	METAL CHIP	100K	5%	1/10W
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R609	1-216-113-00	METAL CHIP	470K	5%	1/10W
R610	1-216-093-00	METAL CHIP	68K	5%	1/10W
R611	1-216-113-00	METAL CHIP	470K	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-238-204-11	RES,. ADJ, METAL GLAZE 10K	
RV102	1-238-204-11	RES, ADJ, METAL GLAZE 10K	
RV201	1-238-204-11	RES, ADJ, METAL GLAZE 10K	
RV202	1-238-204-11	RES, ADJ, METAL GLAZE 10K	
RV301	1-230-275-11	RES, VAR, CARBON 50K/50K (REC LEVEL)	
RV302	1-228-545-00	RES, VAR, SLIDE 50K/50K (HEADPHONE VOLUM	
RV601	1-238-206-11	RES, ADJ, METAL GLAZE 47K	
RV602	1-228-607-00	RES, VAR, CARBON 20K (SPEED TUNE)	
RV603	1-238-206-11	RES, ADJ, METAL GLAZE 47K	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S301	1-554-029-00	SWITCH, SLIDE (PLAY/RECORD)	
S302	1-554-222-00	SWITCH, SLIDE (REC ATT)	
S601	1-570-856-11	SWITCH, SLIDE (SPEED TUNE)	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T301	1-433-244-00	TRANSFORMER, BIAS OSCILLATOR	

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MISCELLANEOUS
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Ref. No.	Part No.	Description	Remark
FG901	A-3164-245-A	COIL ASSY, FG	
HE901	8-825-724-00	HEAD, ERASE EF-201-36	
HRP901	1-543-357-11	HEAD, MAGNETIC (REC/PLAY BACK)	
M901	1-541-851-11	MOTOR	
S901	1-553-226-00	SWITCH, LEAF	
S902	1-552-181-00	SWITCH, LEAF	
S903	1-553-198-00	SWITCH, LEAF	
	1-548-516-23	TIMER, TAPE	